Part A Annexes

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Part A - Annex 8

Retail concerns

Introduction

A8.1 This Annex sets out comments made by stakeholders in relation to our retail concerns, which were presented in Annex 8 of the April 2012 consultation. Here we set out our detailed responses to these comments, whilst our overall position on the functioning of the NGC retail market is summarised in Section 4.

Our position in the April 2012 consultation

A8.2 In the April 2012 consultation, we found that the retail market for NGCs was not working well especially for consumers or SPs.[1]

The consumer experience

A8.3 We found that consumers' awareness of the price of making calls to non-geographic numbers was generally poor. This was because callers did not have consistently good access to clear price information across all call providers and/or at the points when they make their calling and subscription decisions. Our fundamental concern was that, as a result, callers tended to overestimate the price of calling non-geographic numbers and, more generally, to be suspicious about NGCs.

A8.4 We also expressed concern that SPs lacked control in determining the retail price of calls to their services. Although we accepted that some SPs were satisfied with the current operation of the retail market, we considered that many were not and would prefer alternative pricing arrangements. The evidence we saw suggested that it was difficult for SPs and OCPs to negotiate such alternative arrangements through bilateral deals and that a number of attempts to do so had been unsuccessful. We found that the dissatisfaction of some SPs with current pricing arrangements arose in part because OCPs were not incentivised to account for SPs' preferences when setting retail prices (the vertical externality). This asymmetry was found to lead to OCPs frequently setting retail prices above the level SPs would prefer and was also reflected in the division of retail revenues from NGCs being skewed towards OCPs.[2] We found this problem was exacerbated by poor consumer price awareness, which led to less downward competitive pressure on NGC prices and allowed OCPs to further increase the retail prices of these calls without a strong consumer reaction.

A8.5 We also argued that callers' perceptions of a particular NGC number range were likely to be related to their perceptions of other ranges within the NGC system (the horizontal externality). Similarly their perceptions of calling a particular range from a fixed line were likely to be related to their perceptions of calling the same range from a mobile, and vice versa. As a result, we viewed each NGC number range, and the NGC system as a whole, as a collective brand created by all in the supply chain. We considered that some OCPs and SPs did not have incentives to take into account the effect their retail price decisions had on the brand as a whole. When

[1] See Section 4 and Annex 8 of the April 2012 consultation where we set out these arguments.
[2] According to the 2010 Flow of Funds Study, OCPs retained 49% of retail revenues from NGCs whereas TCPs retained 27% and SPs 23%, p.7.

combined with the observed lack of pricing awareness, we found this created incentives for some OCPs and SPs to free-ride on the NGC brand by charging high retail prices. We argued that this behaviour by some OCPs and SPs adversely affected customer confidence in NGCs as a whole, and suppressed the overall level of demand for NGCs.

A8.6 Taking account of the available evidence, we argued that these three market failures (i.e. lack of consumer price awareness, and vertical and horizontal externalities) had the following harmful impacts on callers:

8.6.1 a reduction in demand for NGCs, particularly from mobile phones;

8.6.2 relative prices of NGCs and GCs that did not reflect consumer preferences;

8.6.3 a loss of access to socially important services, particularly for vulnerable consumers; and

8.6.4 a loss of service diversity and innovation to consumers resulting from SPs' lack of incentives to invest in the market.

The SP experience

A8.7 The evidence suggested that many SPs were not aware of the workings of the current regime. In addition, it was clear from survey evidence that some SPs wanted more control over retail prices and yet the existing retail arrangements did not facilitate this. For the reasons outlined above, we considered that OCPs were not incentivised to set retail prices that reflect SPs' preferences and prices were too high as a result. We accepted that the potential for competition between SPs might be limited in some cases although we noted that some number ranges offered greater potential for competition between SPs. In addition, we found that SPs' lack of control over retail prices exacerbated consumer uncertainty and lack of price awareness, resulting in consumers being discouraged from making calls. Finally, we found that SPs' incentives to invest in improved or innovative services were weak as a result of suppressed consumer demand and lack of control over retail prices, and that consumers were therefore missing out on a more diverse range of better quality services.[3]

The OCP experience

A8.8 We highlighted that mobile OCPs accounted for relatively low volumes of NGCs and appeared to have substantially higher charges, whilst fixed OCPs generated higher volumes of NGCs and charged lower prices than mobile OCPs. We were concerned that, in spite of this, fixed OCPs' charges were still relatively high compared to other calls (e.g. fixed geographic calls).

A8.9 In terms of retention, we found that OCPs retained about half of the retail revenue generated by NGCs, but within this, retention was heavily skewed towards mobile OCPs. Consequently, while mobile OCPs accounted for only 11% of NGC volumes in 2009, they accounted for 49% of OCPs' retention.[4] We highlighted that we might be concerned that high NGCs charges were the result of underlying market failures.

[3] See paragraph A8.502 in Annex 8, Part A, of the April 2012 consultation.
[4] 2010 Flow of Funds study, p.7.

A8.10 We argued that the overall impact of the current regime on OCPs' revenue was ambiguous. On the one hand, we considered that poor consumer price awareness led to weak competitive pressure on NGC prices and consequently these were relatively high. As a result, we considered that the price of other calls may be lower via the tariff package effect ('TPE') but by an amount that would not fully offset the higher NGC prices because the TPE is less than 100%. The impact from this effect was to generate higher revenues for OCPs. On the other hand, we considered that due to suppressed demand (as discussed above), consumers were making fewer NGCs, which meant OCPs earned less revenue. We said this was offset to a certain extent by OCPs setting higher prices for other calls, although again not fully due to the fact that the TPE is incomplete. The impact from this effect was lower OCP revenues. Due to these two competing effects, we considered the overall impact on OCPs' revenues was unclear.[5]

Issues raised in responses

A8.11 Almost all of stakeholders' comments on our retail concerns were on the consumer experience. We have divided the responses on the retail concerns into the following broad areas:

i) consumer price awareness;

ii) the vertical externality;

iii) the horizontal externality;

iv) suppressed demand;

v) the relative price of NGCs;

vi) loss of access to socially important services, particularly for vulnerable consumers;

vii) loss of service diversity and innovation; and

viii) general comments.

Consumer price awareness

Stakeholder comments on 08

A8.12 The majority of respondents accepted that consumers lack awareness of the price of making NGCs and generally overestimate how much these calls cost. The only stakeholder to have significant criticisms of our findings was EE. EE accepted that some respondents overstated the price of 08 calls in Ofcom's survey. However, it made a number of challenges to our findings:

- first, EE argued that awareness of the price of making calls to other types of numbers was not perfect either. For example, it disagreed with our contrast between price awareness for NGCs and for calls to mobiles, and considered it could not be used to justify Ofcom's unique interventionist treatment of NGC retail pricing. It commented that we have placed too much weight on the 2012 CC Determination in relation to mobile termination rates ('MTR'), arguing that BT has

[5] See paragraphs A8.509 to A8.510 in Annex 8, Part A of the April 2012 consultation.

not previously passed through MTR cuts in its fixed to mobile prices. EE commented that it was not aware of any evidence that BT had reduced fixed to mobile prices since the CC determination. Instead, EE argued that some prices have actually gone up.[6]

- secondly, EE argued that consumers' awareness of the price of calls to Freephone numbers remained strong relative to other number ranges. It said Ofcom had accepted, in the April 2012 consultation, that: "For 080 numbers, the problem of over-estimation does not appear to be widespread as the median expected value is very similar to true cost". EE considered that the pre-call announcement ('PCA'), combined with the low share of 080 calls from mobiles, provided strong supporting evidence that customers are highly aware of the difference in the cost of calling 080 numbers from mobiles as compared to calling from landlines;[7] and

- third, EE argued that the evidence compiled by Ofcom suggested that awareness of NGC prices is improving over time. In particular, it said that Table A16.8 in the April 2012 consultation showed that expected prices fell significantly for all non-geographic number ranges in the 2011 Consumer survey as compared to the 2009 Consumer survey. It believed it was plausible that better pricing information in the market introduced since 2009 (including Three and T-Mobile's online price checkers) may have driven that result, suggesting that the market was capable of addressing the problem without the need for further intervention by Ofcom. It also noted that [✂].[8]

Ofcom's response

A8.13 On EE's first point, we accept that there are some individual instances of fixed to mobile call prices increasing. However, evidence presented in Ofcom's latest Communications Market Report shows that, on average, fixed to mobile call prices have been falling since 2009.[9] We expect fixed to mobile call prices will continue to fall following the CC 2012 Determination. Overall, our point is that fixed to mobile call prices have been historically high and this has influenced callers' perceptions. We expect these perceptions to fall in time, mirroring the trend in actual prices over the past few years. Therefore we are significantly less concerned about the market for fixed to mobile calls than we are about the market for NGCs because the latter is not showing such signs of improvement.

A8.14 On EE's second point, we note that their reference to Ofcom's text is both selective and misquoted. In paragraph A8.89 of the April 2012 consultation, we stated (emphasis added): "For 080 numbers the problem of over-estimation does not appear to be as widespread as the median expected value is very similar to the true cost. However, the mean expected price of calls from both fixed and mobile lines is still high relative to the true value." This is demonstrated by the evidence set out in Table A8.10 of the April 2012 consultation. The evidence in this table also demonstrates that consumers' overestimation of 080 prices is lower, in relative terms, than their overestimation of other NGC prices, e.g. 0845 or 0870. This is consistent with our understanding that 080 is the most well-recognised of the non-geographic number ranges (as we set out in paragraph 16.99 of the April 2012 consultation). However, this should not detract from the fact that consumers'

[6] EE, April 2012 consultation response, p.7.
[7] EE, April 2012 consultation response, pp.7-8.
[8] EE, April 2012 consultation response, p.8.
[9] Ofcom CMR 2012, Figure 5.61.

awareness of the price of 080 calls is still, in absolute terms, poor. Not only do a number of consumers overestimate the price of 080 calls, but 27% of fixed and 29% of mobile consumers simply don't know what the price of these calls are.[10]

A8.15 We accept that the PCA has helped to improve consumers' awareness of the fact that price of calls to 080 numbers from mobiles is not free (though the message does not make it clear in most cases what the charge is). However, there is evidence to suggest that consumers' awareness of the price of calls to 080 numbers from landlines is more confused as a result.[11]

A8.16 On EE's third point, firstly we note that EE is wrong to claim that Table A16.8 in the April 2012 consultation showed that expected prices fell significantly for all non-geographic number ranges in the 2011 Consumer survey as compared to the 2009 Consumer survey. While this table sets out expected prices for a 0843/44, 0845, 0870, 0871/2/3 and 09 numbers, it does not set out expected prices for 080 calls.

A8.17 More importantly, we note that EE referred to the apparent fact that awareness of NGC prices was improving over time throughout its response (e.g. it considered the implications of this finding on suppressed demand). However, EE is mistaken to draw this inference from our survey results. The mean expected prices in Table A16.8 from the 2011 Consumer survey are indeed lower than those derived from the 2009 Consumer survey. However, this is because the questions in the 2009 and 2011 surveys were worded and structured differently. Specifically, the mean expected price derived from the 2011 Consumer survey reflects answers only by the minority of consumers in the sample who considered themselves to be particularly aware of prices. We explained this in detail in paragraphs A16.68 and A16.69 of the April 2012 consultation. In summary:

- in the 2011 Consumer survey, we showed respondents a number of statements and asked which best described what they know about the cost of calling a particular number range from their mobile and from their landline.[12] For those that responded "I know how much it costs per minute" we then asked them how much they thought it cost to call that number range, during peak hours, in the daytime on a weekday, from their landline/their mobile.[13] We used the responses to this latter question as an alternative estimate for expected prices.

- we noted that the ppm expected prices taken from the 2011 Consumer survey were likely to understate residential consumers' beliefs about prices:

  - only 14% and 7% of respondents stated that they know the costs of 0845 and 0870 calls from landlines. For mobile calls the corresponding percentages were 10% and 7% (see Table A16.7 of the April 2012 consultation). As a result, only a minority of respondents to the 2011 Consumer survey were directed to the subsequent question asking for a ppm estimate of the price;

  - moreover, the question routeing meant that we only asked for a ppm estimate of the price from those respondents who consider themselves to be particularly aware of prices. It is unsurprising that this subset of consumers

[10] The 2009 Consumer survey. Q43/44.
[11] See paragraphs A8.198 to A8.210 of the April 2012 consultation, for example.
[12] The options were "I have never heard of [those] numbers", "I know how much it costs per minute", "I do not know how much it costs per minute but think it is expensive", "I do not know how much it costs per minute but do not think it is expensive" and "I do not know how much it costs per minute and don't know whether it's expensive". 2011 Consumer survey, question GL01.
[13] 2011 Consumer survey, question GL02.

tends to make more accurate predictions of actual prices i.e. that they tend to overestimate prices less. In other words consumers as a whole would tend to have less accurate expectations about call prices than the (small minority) of respondents that provided a ppm estimation in the 2011 Consumer survey;

- this is reinforced by the much higher proportion of respondents saying "I do not know how much it costs per minute but think it is expensive" compared to those saying they "…do not think it is expensive" (see Table A16.7 of the April 2012 consultation). In other words, those respondents that were not routed to the second ppm question generally tend to think these calls are expensive. It thus seems plausible that, had we pushed them to provide a ppm figure then this would increase our estimates of the mean expected price.

A8.18 A comparison of the two sets of survey results does not therefore provide meaningful evidence about the trend, because it does not compare like with like. We are not aware of any other evidence to suggest that consumer price awareness is improving. As we set out below, this lack of evidence to suggest that consumer price awareness is improving means we do not give credence to any of EE's subsequent arguments that rely on this point (e.g. suppressed demand).

A8.19 Overall, we do not accept EE's attempts to play down the problems associated with a lack of consumer awareness of NGC prices. In our view the evidence supports the conclusion that consumers have poor awareness, experience confusion and significantly over-estimate the price of calls to the majority of non-geographic number ranges.

Stakeholder comments on 09

A8.20 EE made several comments about the 09 number range. For instance, it noted that the same Ofcom survey respondents who overstated 08 prices understated the price of 09 calls. EE considered that these directionally opposite results for 08 and 09, taken together, contradict Ofcom's assumptions of market failure and purported damage to the overall non-geographic number brand as a result of lack of price awareness.[14] EE also noted that consumers under-estimated the price of calls to 09 numbers by a greater margin than the amount by which consumers over-estimated the price of 08 calls.[15]

A8.21 EE also argued that Ofcom's research and analysis indicated that there would be a reduction in demand for calls to 09 numbers, as the unbundled tariff was expected to correct current customer price under-estimations of the cost of calls to 09 numbers. It argued that Ofcom should properly reduce the financial value of the benefits predicted to be gained from an uplift in 084/087 and 080 call volumes by the equivalent financial value of the predicted level of reduction in calls to 09 numbers.[16]

Ofcom's response

A8.22 Our response to these comments is set out in full in paragraphs A11.67 to A11.135 in Annex 11.

[14] EE, April 2012 consultation response, p.8.
[15] EE, April 2012 consultation response, p.11.
[16] EE, April 2012 consultation response, p.13.

The vertical externality

Stakeholder comments

A8.23 The majority of respondents agreed with our vertical externality analysis. EE accepted that our survey evidence and the responses to the December 2010 consultation indicated that at least some SPs would prefer alternative pricing arrangements. EE also accepted our evidence that certain individual SPs such as the National Grid appear to date to have failed to be able to secure arrangements meeting with their preferences.[17] However, EE questioned whether our proposals were a proportionate means to meet the preferences of SPs, in the interests of protecting consumers.

A8.24 In addition, Vodafone raised several challenges to our findings. Vodafone did not deny the possibility of spill-over effects and lack of alignment between the interests of OCPs and SPs (although it noted that SPs do not account for OCPs' preferences either). Rather, it questioned the severity of the externality in practice, given the observed potential for commercial negotiation. It cited the Department for Work and Pensions ('DWP') example and, contrary to our assertions, argued that the DWP had considerable buyer power and that other SPs were in a similar position. It disagreed with our analysis of bilateral deals as set out in Annex 20 of the April 2012 consultation.[18] Similarly, EE argued that the market was capable of meeting the preferences of 08 SPs without intervention, e.g. through mobile voice shortcodes or through commercial deals. On the latter, EE and Vodafone considered that if there was unmet demand for commercial agreement, aggregators would step in to facilitate successful negotiations.[19]

A8.25 Vodafone disagreed that commercially negotiated origination payments are significantly above costs.[20] Vodafone highlighted the importance of SP willingness and ability to pay in order for negotiations to be worthwhile for both parties, and dismissed the lack of successful negotiations by National Grid and by any SP on the 0845/0870 number ranges on that basis.

A8.26 Vodafone suggested that the reason smaller mobile OCPs have not been brought into the DWP deal is because of diminishing returns to the DWP of negotiating with additional OCPs.[21]

A8.27 EE argued that the focus of our evidence was on 08x SPs that would like calls to their numbers to reflect the price of calls to geographic numbers. EE noted that the 03 range already allowed for this and so did not think that unbundling was necessary or proportionate.

A8.28 EE also commented that there was very little evidence of unmet demand by SPs offering socially important services (080 calls from landlines are already free to caller, plus mobile calls to members of THA as well as the Samaritans and DWP). EE also argued that the SPs who did want calls to their numbers zero-rated appeared to be in the minority, which suggested that alternative means would be less costly and more proportionate than mandating that all 080 calls should be free to caller. EE listed a number of examples of allowing the market to continue to

[17] EE, April 2012 consultation response, p.8.
[18] Vodafone, April 2012 consultation response, pp.20-21.
[19] EE, April 2012 consultation response, pp.9-10.
[20] Vodafone, April 2012 consultation response, Annex 2.
[21] Vodafone, April 2012 consultation response, paragraphs 22-30.

evolve to meet these needs, such as inclusive 080 minutes in bundles, use of zero rated mobile short codes, a third party such as Ofcom or a commercial aggregator being designated to facilitate commercial negotiations, establishing a new number range (such as 0500) to meet the preferences of these SPs, or setting a maximum price for calls to 080 numbers from mobiles.[22]

Ofcom's response

A8.29 Vodafone and EE argue that the market is capable of meeting the preferences of SPs. We note that Vodafone cites the DWP example but we reiterate that an isolated example of a commercial agreement regarding retail prices is not evidence that the market is working well, particularly when a greater number of SPs have complained about the difficulties in reaching such an agreement. In relation to the DWP example, as we set out in paragraph A20.30 of the April 2012 consultation, the negotiations between the DWP and the mobile OCPs were protracted and required the intervention of the then Secretary of State to push forward an agreement. Vodafone considered that the Secretary of State's involvement was evidence that the DWP, along with other, similar sized SPs had considerable bargaining power in commercial negotiations. However, as we set out in paragraph A20.31 of the April 2012 consultation, we do not consider that this provides a template for bilateral negotiations more generally. We consider that even if SPs of a similar size to the DWP had the potential resources to negotiate with OCPs, they are likely to be deterred by the significant transaction costs demonstrated in that example, as well as by high origination payments that are likely to form the basis of such agreements.

A8.30 Both Vodafone and EE suggested that if there was unmet demand for commercial agreement on retail prices, aggregators would come in to reduce transaction costs between OCPs and SPs. We understand that there are a number of aggregators currently selling MVSCs (e.g. OpenMarket, Orca Digital, Oxygen8), mainly as an alternative to 09 numbers. These aggregators negotiate retail price points for MVSCs that are common across the majority of the mobile OCPs and that align with BT's retail prices.[23]

A8.31 We recognise the potential for these aggregators to perform a similar role in facilitating negotiations over retail prices for non-geographic numbers, helping to overcome issues relating to lack of bargaining power and high transaction costs. However, we do not accept that the fact this does not currently happen can be attributed to a lack of unmet demand from SPs for negotiation on retail prices. In fact, the evidence suggests that a significant proportion of SPs would like a free-to-caller 080 number, and a number of SPs them have indicated that they are willing to pay a material amount in order to secure that.[24] We would therefore expect commercial aggregators to have successfully brokered a number of agreements on the 080 range. The fact that this has not happened suggests there are barriers preventing aggregators from performing this role successfully:

- whilst an aggregator would offer some transaction cost savings, it is not clear these savings would be sufficiently large to make the aggregation role

[22] EE, April 2012 consultation response, p.9.

[23] We understand that some mobile OCPs do not operate MVSCs. For example, we were told by PPP that Lebara does not operate them and that generally, it depends on the relationship between the MNO and MVNO as to whether they operate them or not.

[24] See paragraphs 13.58 in Part C, Section 13 where we discuss SP preferences on the 080 range. See also paragraph A8.34 below.

worthwhile. Aggregators would still have to negotiate with at least the four national mobile OCPs on one side and, given the difficulties in setting different retail prices for different SPs on the same number range, with all SPs on a particular number block or other aggregators on the other. The transaction costs involved in coordinating this number of players, under the status quo, are unlikely to be trivial; and

- it may also be the case that OCPs are simply unwilling to negotiate on the price of NGCs. It is unclear how a commercial aggregator would be more successful in getting these OCPs to enter into negotiations. For example, as set out in Annex 20 of the April 2012 consultation, a number of SPs (including the National Grid) found that some OCPs were simply unwilling to consider zero-rating mobile 080 calls to some services. It is not clear to us how commercial aggregators would encourage OCPs to be more cooperative, particularly as they would be unlikely to be able to offer a more favourable deal to the OCP than the SP itself (once their own fee and the lack of a significant reduction in transaction costs has been taken into account).

A8.32 We consider that similar difficulties are likely to explain why aggregators have not stepped in on other ranges (e.g. 084/087) despite SP demand for particular retail prices to be charged by OCPs. For the reasons set out above we therefore disagree with Vodafone's and EE's arguments that the market is capable of meeting the preferences of SPs.

A8.33 In terms of Vodafone's argument that the commercially negotiated origination payments of which we are aware are not significantly above costs, as set out in Annex 26 on the basis of the evidence available to us at this time, we consider that a cost-based origination payment would not exceed 3.3ppm (including LRIC+ but excluding A&R costs). The evidence we have seen on commercially negotiated origination payments, which we collected through a section 135 information request in 2011 and are discussed in Section 4, suggests these payments exceed our estimates of cost.[25] We therefore disagree that the failure of commercial negotiations reflects a lack of willingness to pay on the part of SPs. We consider that if the commercially negotiated payments were lower (i.e. closer to the cost), it is possible that more deals between OCPs and SPs could be negotiated successfully. However, we also note that several OCPs have shown a reluctance to negotiate at all. In this context, we disagree with Vodafone's dismissal of the National Grid example on the basis that National Grid was not willing to pay the negotiated origination payment. As set out in paragraph A20.43 of the April 2012 consultation, no OCPs offered National Grid the chance to pay an increased origination charge in exchange for free mobile calls, despite its clear indicated preference for its calls to be zero-rated.

A8.34 More generally, we note that in the April 2012 consultation we presented evidence of SPs' willingness to pay. We asked a number of questions in the 2011 SP survey that explored the trade off for SPs between higher costs and a particular retail price for the call. Whilst we found that responses were mixed, we noted that a significant number of SPs using 080 and 0845 numbers would be willing to pay higher hosting fees in order to secure a particular retail price for calls to their number. In particular, we noted that of the two options for intervention that we asked about, 52% of 0845

[25] See A8.136, Part A, Annex 8 of the April 2012 consultation. As set out in that paragraph, we do not consider that A&R costs should be recovered through the mobile origination charge and as a result these costs are not reflected in our estimate of LRIC+. However, even if these costs were included, some of the commercially negotiated charges would still be far higher.

SPs preferred all callers paying the same as for calls to a “normal landline” even though this option also involved a 1.5ppm increase in the cost of operating the number for the SP. Similarly, we asked 080 SPs about the impact of mobile 080 callers being charged and, for those SPs that felt they were disadvantaged, we then asked how much they would be willing to pay in order to secure zero-rated mobile 080 calls. 17% of all 080 SPs were disadvantaged by mobile 080 call charges and gave a ppm figure for how much they would be willing to pay for their callers to avoid those charges (a further 14% said they were disadvantaged but did not know how much they were willing to pay).[26] Therefore, in light of this evidence, we do not consider that Vodafone’s comment about SPs not being willing to pay is robust.

A8.35 On EE’s comment that our evidence suggested that most 08 SPs had a preference for geographic rating which could be met by 03 without the need for the unbundled tariff, we note in the first instance that our 2011 SP survey only considered SPs on the 080 and 0845 number ranges. It is therefore not surprising that of the 08 SPs we surveyed, most had a preference for geographic rating because many of these SPs are likely to have selected 0845 in order to secure geographic rating for at least some calls. We therefore consider the preferred retail price of these SPs is unlikely to be reflective of those SPs who selected revenue sharing 084/087 ranges, whose needs are therefore unlikely to be met by 03.

A8.36 Second, although we accept EE's point that many of the SPs that want a geographically-rated number could migrate to the 03 number range, we note that take up of the 03 range by SPs remains low relative to other non-geographic ranges[27] and consider that they may be unwilling to migrate to 03 in the absence of wider reform of prices for calls to non-geographic numbers. We suggested a number of reasons at paragraph A8.173 of the April 2012 consultation as to why this might be. We noted that there was some evidence that lack of consumer knowledge of 03 is a major reason why SPs prefer using other non-geographic numbers. We also said that in the current environment of mistrust and the inconsistency of the NGC system, the benefits for SPs of migration to 03 may not be as high as one would expect. For example, consumers may not realise that 03 is in their bundles or priced as a geographic call.[28] Accordingly, while we expect the barriers to 03 adoption to fall and for it to become a more popular number range, in the absence of wider changes to enhance consumer price transparency for calls to non-geographic numbers, we do not consider that the existence of 03 as a geographically rated range, on its own, is sufficient to meet SP demand for such numbers.

A8.37 In contrast, we consider that the implementation of the unbundled tariff on 084/087 will create a virtuous circle that will encourage migration to the 03 range. Under the current regime, SPs with a strong preference for geographic rating are not able to achieve this for all calls, particularly mobile calls, but do have geographic rating in place for calls from a number of fixed OCPs including BT. Our decision to unbundle the 084/087 number ranges will lead to these ranges no longer being geographically rated for fixed line calls, which we expect to trigger migration to 03 by those with a strong preference for geographic rating. We consider it likely that

[26] 2011 SP survey, Q14 “How to you feel about the impact of these mobile charges on the total number of calls that you receive” and Q16 “By how much would you be willing to increase the pence-per-minute amount that you pay to receive calls”.

[27] Paragraph 7.11, April 2010 consultation

[28] Evidence from our 2009 Consumer survey was that very few consumers were aware of the price of 03 calls – 72% of respondents not knowing the price of a call to 03 from a fixed line and 71% not knowing the price from a mobile.

consumer confidence in this number range will increase as a result of this migration, making it a more attractive option to SPs selecting a number range in the future.

A8.38 Finally, we also note that the vertical externality faced by those SPs who would like to secure geographically rated calls is only one reason for proposing the unbundled tariff. Even if this particular problem could be addressed through migration to 03, our other concerns outlined in Section 4 would nonetheless remain.

A8.39 On EE's comments regarding the evidence of unmet demand for SPs on the 080 range offering socially important services, as mentioned above, Annex 20 of the April 2012 consultation showed that there was demand for a universally free-to-caller range from a number of services that had failed to negotiate with OCPs successfully, including:

- National Grid Smell Gas 0800 number;
- The Helplines Association Public Sector Special Freephone Tariff ('PSSFT') scheme; and
- a breakdown cover provider.

A8.40 It is plausible that other negotiations may have been attempted if these cases had ultimately been successful.

A8.41 In relation to EE's argument that 080 SPs who want zero-rated calls are in the minority, we consider this is an overly reductive interpretation of the 2011 SP survey results we presented in the April 2012 consultation.[29] These results showed that:

- 89% of SPs said that the fact that the callers from fixed lines do not have to pay for calls to their 080 was important, or very important, to their organisation, and 72% said that mobile callers not paying for calls was important or very important;[30]
- 87% said the message or brand associated with having an 080 number was important or very important[31]; and
- 45% of respondents said the one aspect of the 080 range that they would most like to change was the charges from a mobile.[32]

A8.42 Further, 47% of SPs said that mobile call charges were a disadvantage in terms of the number of calls received.[33] That 47% was broken down as follows:

- 36% of them (which equates to 17% of all SPs) gave a ppm figure for how much they would be willing to increase the cost of operating an 080 number in return for free mobile calls;

[29] See paragraphs 15.26 – 15.27, Part C, Section 15 of the April 2012 consultation.
[30] 2011 SP survey, Q11 "How important is it to your organisation that 080 numbers have the following features …the fact that callers from fixed lines don't have to pay / callers from mobile phones don't have to pay".
[31] 2011 SP survey, Q11 "How important is it to your organisation that 080 numbers have the following features … the message or brand associated with having a 080 number".
[32] 2011 SP survey, Q13 "If you could change only one of the following aspects of 080 numbers, which one would it be?"
[33] 2011 SPs survey, Q14: "How do you feel about the impact of … mobile [call] charges on the total number of calls that you receive?"

- 29% of them (which equates to 14% of all SPs) did not know how much more they would be willing to pay in return for free mobile calls to their 080 number; and

- 35% of respondents (which equates to 17% of all SPs) were unwilling to pay more.[34]

A8.43 From the above it is clear that whilst the number of respondents who said the thing they would like to change most about 080 is the price of mobile calls and the number who said that mobile call charges were a disadvantage in terms of call volumes were in the minority, these respondents nonetheless accounted for nearly half of all SPs surveyed (i.e. 45% and 47%, respectively). Further, we note that the number of respondents who said that mobile callers not paying for calls was important or very important were clearly in the majority. We therefore consider there is evidence of significant unmet demand for zero-rated calls on 080 and that, for reasons discussed in Annex 29 (as well as in Section 6 where we set out how it meets the necessary legal tests), making 080 free-to-caller is a proportionate remedy.

A8.44 EE made a number of alternative suggestions for the mandating of zero rating of all existing and future 080 numbers. We discussed the option of a Maximum Mobile Price ('MMP') and establishing a new non-geographic number range in Section 16 of the April 2012 consultation, and concluded that making 080 free-to-caller performed better against our assessment criteria than this option.[35] We comment on the limitations of MVSCs and commercial negotiation assisted by a third party in this Annex (paragraphs A8.116 to A8.123). The only potential alternative put forward by EE that we have not considered elsewhere is the inclusion of 080 minutes in bundles. EE suggests that we should allow the market to evolve in this way to meet SPs' preferences for free 080 calls. However, having identified concerns about the operation of the retail market, we would have no certainty that these concerns would be adequately addressed if we were to rely on mobile operators voluntarily deciding to include 080 calls in bundles. We are aware of some cases where mobile OCPs have included 080 calls in bundles. For example, T-Mobile has recently included them in their bundles and the MVNO GiffGaff does not charge for them at all. While this shows that some providers are introducing free 080 calls in bundles, it is not evidence of adoption to the extent that our concerns would be addressed. We consider it likely that differing pricing structures for 080 calls would continue to exist in the absence of intervention and therefore the consumer confusion we have identified would not be addressed.

A8.45 Furthermore, and as outlined above, we consider there to be significant unmet demand by SPs for a number range which is guaranteed to be free-to-caller. The use of bundled minutes would not give this certainty to SPs because, for example, callers may have used up their inclusive minutes or be calling from a pre-pay mobile phone that does not offer bundled minutes.[36] We note that vulnerable customers are more likely to fall into this latter category, and could be excluded from calling

[34] 2011 SPs survey, Q16: "By how much would you be willing to increase the pence-per-minute amount that you pay to receive calls on your freephone number(s) in return for the charge to mobile callers being reduced to zero?" This question was only asked to the 47% of SPs that said they were disadvantaged by mobile call charges.
[35] See Section 13 in Part C of this document for our updated assessment of the free-to-caller and MMP options effectiveness in addressing SP preferences.
[36] 51% of all mobile subscribers are on pre-pay contracts. Ofcom, CMR 2012, p.14 (http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr12/UK_0.pdf). This is a point which EE in fact makes elsewhere in its response (see page 53, in particular footnote 90).

socially important services as a result.[37] We therefore do not consider this would be as effective as our free-to-caller option in addressing our key concerns in relation to 080.

The horizontal externality

Stakeholder comments

A8.46 The majority of respondents agreed that the horizontal externality was a source of concern. However, several of the mobile operators challenged our findings.

A8.47 EE was critical of our analysis of the horizontal externality for three main reasons:

- first, EE argued that correlation between consumers overestimating the price of calling different types of NGCs is no substitute for direct causal evidence that overestimation of one price results in overestimation of the other price. It argued that the correlation could be caused by other factors such as consumers overestimating fixed call prices as a result of BT increasing call bundle charges, or by the fact that consumers overestimate the price of 08x calls because they resent the need to pay for these largely non-discretionary calls in the first place, as compared with more discretionary 09 calls, which customers are more likely to willingly choose to make and the price of which customers underestimate;

- second, it argued that the only significant correlation was between fixed calls to 080 numbers and fixed calls to 0845 numbers which it did not consider to be evidence of widespread cross-contamination of price misperception across all non-geographic number ranges;

- third, EE argued that we failed to adequately explain why horizontal externalities on one number range (e.g. 08) would be expected to impact on other number ranges (e.g. 09), when the two have such different demand and supply characteristics (e.g. 08 calls are less discretionary in nature than 09 calls).[38]

A8.48 Vodafone reiterated its views presented in its response to the December 2010 consultation, questioning the idea that OCPs can 'free ride' on the NGC brand, which in its view has never been well-established or understood. For example, it pointed out that Freephone has never been universally free-to-caller from mobile and that ‘local’ and ‘national’ rate shorthand for 0845 and 0870 have similarly never had a clear meaning in the mobile context. More generally, Vodafone argued that the idea that OCPs can ‘free ride’ on a clearly understood brand is at odds with the available evidence of consumers’ lack of awareness and price misperception.

A8.49 Vodafone commented that we had appeared to identify three distinct ‘flavours’ of the horizontal externality:

- between mobile originated and fixed originated calls to the same number range;

- between one number range and another number range; and

[37] 26% of households in the DE group are mobile only (compared to 15% of all households). Ofcom, Consumer Experience Research report 2012, p.6.
http://stakeholders.ofcom.org.uk/binaries/research/consumer-experience/tce-12/Consumer_Experience_Researc1.pdf

[38] EE, April 2012 consultation response, p.10.

- the collective brand of NGCs as a whole.

A8.50 On the first, it disagreed with the suggestion that a lack of price homogeneity between fixed and mobile origination represented a market failure and argued that it was likely that the NTS formula (arising from the NTS Call Origination Condition)[39] had distorted pricing among fixed originators of NGCs (so that they are in fact too low).[40]

A8.51 On the second, Vodafone accepted that the horizontal externality could exist between closely adjacent number ranges, highlighting the notable contrast in price between 0870 and 0871 numbers. However, it noted that this could equally be classified under a lack of price awareness.

A8.52 On the collective brand of NGCs as a whole, Vodafone commented that the idea of a 'spillover' in perception such that the effect of price changes is not fully internalised is not, in principle, confined to NGCs.[41] Vodafone suggested that our view that this might be relatively more important in relation to NGCs than other call types seems to hinge on our view about lack of price awareness. Thus, it argued that it was not clear that there was much of a separate point left over if lack of awareness were removed from the equation.

Ofcom's response

A8.53 On EE's first point, our proposed conclusion reflected the nature of the available evidence, as set out in paragraphs A8.197 to A8.215 of the April 2012 consultation. As EE recognises, we acknowledged that we did not have direct causal evidence of the horizontal externality in the previous consultation.[42] However, the absence of direct casual evidence does not mean it is impossible to reach an informed conclusion based on the available evidence. For the reasons set out in detail in paragraphs A8.199 to A8.215 of the April 2012 consultation, we maintain the view that there is some empirical evidence to support the existence of two types of horizontal externality: (i) between different OCPs (in particular, between mobile-originated and fixed-originated calls); and (ii) between different number ranges.

A8.54 EE put forward two alternative explanations of the correlations in the April 2012 consultation. EE's first suggestion was that the correlation could be explained by BT increasing its call bundle charges leading to consumers overestimating the price of fixed 08 prices. However, EE does not make clear how this proposed explanation is consistent with the evidence. For example, it is unclear to us how changes in BT's call bundle charges would explain the observed positive correlation between consumers' expectations of landline 080 call prices and mobile 080 call prices (i.e. type (i) horizontal externality).

A8.55 We understand that BT started to include 0845 and 0870 numbers in some of its call bundle packages in January 2009, including its basic "line rental" package, which despite its name, does include an inclusive call allowance.[43] BT has

[39] For an explanation of the NTS Call Origination Condition, see Section 3.
[40] Vodafone, April 2012 consultation response, pp.31-36.
[41] Vodafone, April 2012 consultation response, pp.37-43.
[42] April 2012 consultation, Part A, Annex 8, paragraphs A8.203 and A8.210.
[43] http://www.guardian.co.uk/money/2009/jan/08/bt-customers-premium-rate-phonecalls. See also http://stakeholders.ofcom.org.uk/binaries/consultations/cw-bt-0845-polos/summary/determination.pdf.
- Ofcom's dispute determination of 1 February 2013 in relation to BT's 0845 POLOs (CW/01092/09/12), which considers BT's inclusion of 0845 calls in its line rental packages from 1 November 2009.

maintained this approach and these numbers are still included, in varying degrees, in all retail call bundles.[44] We also understand that BT has raised its line rental prices several times between April 2009 and the present.[45] Consequently, we accept that an increase in line rental charges may have raised consumers' expectations about the price of their call package as a whole. This may potentially have influenced consumers' tendency to overestimate both 0845 and 0870 prices in the past few years, leading to the observed correlations in price expectations. However, given that our principal measure of consumers' expected prices, used to measure correlations between consumers' expected prices of different number ranges, was obtained from the 2009 consumer survey (data was gathered in January and February 2009[46]), we consider that consumers' perceptions of these prices were already correlated prior to the subsequent changes in the market. We therefore maintain that the horizontal externality is likely to have contributed to the observed correlation in price expectations for these number ranges. Furthermore, EE has not explained how increases in BT's call bundle charges would influence the correlation between consumers' expectations of the price of 080 calls and 0845/0870 calls. We therefore do not consider that increases in BT's call bundle charges are sufficient to explain the observed positive correlations between consumers' expectations of the price of calls to different non geographic number ranges.

A8.56 EE's second suggestion to explain the observed correlation was that consumers' overestimation of fixed 08 prices could be caused by consumer resentment at having to pay for 08 calls compared with more discretionary 09 calls. We note that the correlations we presented were between consumers' expectations of the price of fixed calls to 080 and their perceptions of the price of (a) fixed calls to 0845 (b) fixed calls to 0870 and (c) mobile calls to 080. As fixed 080 calls are free-to-caller, it is not likely that they resent paying for these calls. As a result, we consider it unlikely that consumer resentment was driving the observed correlations. Instead, we consider that to the extent that consumers' resentment about having to pay for 080 mobile calls or 0845/0870 fixed calls affects their expectations about the price of fixed 080 calls, this is supportive of the horizontal externality.

A8.57 EE's second point is that the only significant correlation is between fixed calls to 080 numbers and fixed calls to 0845 numbers, and this is not evidence that the horizontal externality is widespread. However, Table A8.11 in the April 2012 consultation (and the subsequent analysis in paragraph A8.202) suggests there is a positive correlation between consumers' expectations of the price for all call types considered - i.e. between consumers' expectations of the price of fixed calls to 080 numbers and consumers' expectations of the price of fixed calls to 0845 numbers, fixed calls to 0870 numbers and mobile calls to 080 numbers. In particular, the correlation coefficient reported in Table A8.11 between fixed calls to 080 and fixed calls to 0845 is 0.393, whilst the correlation coefficient between fixed calls to 080 and mobile calls to 080 is 0.395. In other words, the evidence suggests that the

[44] http://www.productsandservices.bt.com/consumerProducts/displayTopic.do?topicId=31674&s_intcid=con_intban_hp_ph

[45] For example, in April 2009 BT introduced a £1 increase in its line rental charges (http://www.uswitch.com/news/homephone/20090126/bt-increases-line-rental-prices/) from £11.50 to £12.50. In October 2010, it increased line rental by 50p (http://bt.custhelp.com/ci/fattach/get/1783464/1279104745/redirect/1/session/L2F2LzEvdGltZS8xMzUyNzMwMzE5L3NpZC9XZFFRNzVibA). In December 2011 it increased its line rental by 70p (http://www.moneysavingexpert.com/news/phones/2011/11/bt-landline-costs-to-rise-this-saturday)

[46] See paragraph 1.7: http://stakeholders.ofcom.org.uk/binaries/consultations/wmctr/annexes/transparency.pdf

correlation is stronger between fixed and mobile 080 calls than between the particular pairing which EE accepts have a significant correlation.

A8.58 We recognise that due to limits on sample size we only have evidence of correlation in price expectations between these types of call. However, in Section 4, we set out evidence from the 2011 Consumer survey and a range of anecdotal evidence provided by stakeholders which shows that there is consumer confusion between non-geographic number ranges more generally.

A8.59 We consider that, in conjunction with this evidence, the fact that we do observe evidence of the horizontal externality in those call types for which we have data is consistent with its existence in other number ranges.

A8.60 On EE's third point, as set out in paragraph 8.29 of the April 2012 consultation, we consider it less likely that there is confusion between 08, 09 and 118 numbers. As noted above, our analysis of correlations and conclusions did not rely on confusion between 08 and 09 call prices. Whilst we do not rule out the possibility of some confusion, our main focus is confusion between different 08 ranges.

A8.61 Overall, we consider that Vodafone's main arguments are about the characterisation of problems at the retail level rather than about whether or not these problems actually exist. In other words, in our view Vodafone has not disproved the existence of the horizontal externality - indeed, it offers no evidence to directly challenge our assessment - rather, it seems to be grouping the horizontal externality under the general heading of lack of consumer price awareness.

A8.62 In relation to Vodafone's argument that the NGC brands are neither well established nor well understood, we consider that there are specific ranges with brands related to price, such as 080 (free), 0845 and 0870 (geographically-rated) which are clearly understood by OCPs. As set out in paragraphs 213 to 216 of the 08X CAT Judgment, O2 raised a similar point arguing that Ofcom had not sufficiently articulated its policy preferences for these number ranges. However, this argument was rejected by the CAT on the basis that it considered that "OFCOM's policy preferences for 080, 0845 and 0870 were explicitly stated in the National Telephone Numbering Plans". Moreover, the CAT judged that these preferences may well have been further expanded or elucidated in the course of dispute resolution.

A8.63 We consider that the horizontal externality works in the following way: in these ranges with a price brand clearly understood by OCPs, OCPs have an incentive to raise prices above that level because, given the lack of consumer price awareness, some of the consequences of the higher price are faced by other OCPs and not just by themselves. This is because consumers have low awareness of specific NGC prices but are also aware that prices are sometimes higher than the intended price brand. They may respond to this awareness by overestimating call prices charged by OCPs generally on the number range in question, not just the specific OCP with the higher price. We consider that this is the type (i) horizontal externality and an example of this could be the correlation between consumers' expectations of the price of mobile-originated and fixed-originated calls to the same number range (as identified in the April 2012 consultation). Consumers may also overestimate prices not just on the 08 number range in question but also on other 08 number ranges. This is the type (ii) horizontal externality (evidence for both types was set out in paragraphs A8.199 to A8.215 of the April 2012 consultation).

A8.64 In relation to Vodafone's argument that the significance of the horizontal externality hinges on our view about the lack of price awareness, we accept that the lack of consumer price awareness and the horizontal externality are closely related. Indeed, a lack of price awareness is an integral part of the horizontal externality process as described above. In the April 2012 consultation, we argued that the three market failures were all interlinked and the horizontal externality was exacerbated by the lack of consumer price awareness and vice versa. We therefore agree that if consumers were relatively price aware, we would be less concerned about the horizontal externality. However, we consider this point to be academic because, as demonstrated by our survey evidence and as accepted by almost all of our stakeholders (including Vodafone), consumer awareness of the price of NGCs is poor. Vodafone also commented that the "disparity between fixed and mobile pricing cannot in itself be construed as market failure". This was in relation to our assertion that consumers' expectations of the price of fixed and mobile NGCs are related. We note that, in this instance, we were not articulating a concern about the fact that fixed and mobile NGCs are priced differently but rather that in spite of the fact they are priced differently there appears to be a relationship between consumers' expectations of the price of fixed and mobile calls to the same number range. This relationship leads to problems of consumer confusion and mistrust through the horizontal externality. While we accept that this may not be the case for all NGCs, there is clear evidence of confusion between the prices of fixed and mobile 080 calls (e.g. 29% of consumers thought landline calls to 080 numbers were not free despite the fact they always have been - see paragraph A8.198 in Annex 8 of the April 2012 consultation).

A8.65 Finally, Vodafone argued that 'spillovers' in perception such that the effect of price changes are not fully internalised is not confined to NGCs. Despite this claim, Vodafone does not offer any examples of this problem on a similar scale on other number ranges.

Suppressed demand

A8.66 Other than EE, most respondents agreed that consumers tend to overestimate the price of NGCs and this could plausibly lead to suppressed demand. EE challenged our findings and set out, in detail, the reasons why. EE's arguments break down into the following issues, which we respond to in turn below:

- price overestimation;
- increased demand; and
- alternatives to NGCs.

Price overestimation

Stakeholder comments

A8.67 First, EE did not believe that the evidence proved that consumers over-estimated the price of NGCs. For example, it said that our 2011 Consumer survey showed that mobile customers correctly estimated the price of calls to 0871 numbers (Table A16.8) and the median expected value of 080 calls was very similar to the true cost. EE suggested that consumers expectations' of the price of NGCs had fallen between 2009 and 2011 based on the difference between Ofcom's consumer surveys in these years.[47]

[47] EE, April 2012 consultation response, p.11.

Ofcom's response

A8.68 As we explain above, in our view EE is wrong to draw an inference about the trend in consumers' price expectations from the 2009 and 2011 Consumer surveys. Similarly, in terms of the correct estimation of 0871 prices, the 2011 Consumer survey results are likely to understate the extent to which consumers over-estimate prices (the reasons for this were set out in paragraph A16.69 of the April 2012 consultation). Therefore, we do not agree that this evidence establishes that consumers accurately predict the price of calls to 0871 numbers. As we set out above, we accept that the 080 range is the most well-recognised of all the non-geographic number ranges. We therefore accept that the degree of price overestimation on this range is not as significant or as widespread as on other 08 number ranges. However, some consumers do overestimate the price of 080 calls and, furthermore, a significant number are not confident in the price. For 084/087 calls, we consider that there is quite significant overestimation of the price of 0843/4/5 and 0870/1/2/3 calls, which account for a significant proportion of the total NGC revenues and call minutes. Therefore we do not accept EE's criticisms in relation to the 084/087 ranges.

Increased demand

Stakeholder comments

A8.69 EE questioned the likelihood that a reduction in NGC price overestimations (to the extent that these exist) will increase demand for NGCs. It considered that we had failed to adequately substantiate the hypothesis that improved price awareness would result in a corresponding overall increase in demand for NGCs.[48]

A8.70 With respect to 080 numbers, EE commented that we appeared to accept in our base case that our proposals would not necessarily result in any overall increase in demand for calls to these numbers (referring to paragraphs 16.135 and A26.12 in Part C of the April 2012 consultation). EE also considered that 080 calls were not overly discretionary (as compared with 09 numbers) and hence it would not expect an increase in total volumes. It referred to evidence in paragraph 13.54 of the April 2012 consultation and claimed that this supported its view that there would not be an increase in total 080 volumes if the range were made free-to-caller.

A8.71 EE also argued that, even in relation to the likelihood of greater fixed to mobile substitution, it is notable that the majority (59%) of survey respondents stated that they would not call from mobiles if the price were to be zero rated, with only 16% saying they would like to make such calls. On 084/087 numbers, EE commented that Ofcom's predictions were purely theoretical and are not validated by any "real-world" evidence. EE highlighted that economic literature and best practice typically raised serious concerns with the validity of using survey evidence to accurately predict consumers' behaviour in response to hypothetical situations, since stated preferences often do not accurately reveal true preferences and the choices consumers will make in practice. EE listed quotes from Ofcom's March 2011 MTR statement which included opinions from Case Associates, the CC, Oftel and the OFT which warned of attaching too much weight to survey results.[49]

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[48] EE, April 2012 consultation response, p.4.
[49] In particular they highlighted paragraphs A5.2 to A5.4 of the March 2011 MTR statement (available here: http://stakeholders.ofcom.org.uk/binaries/consultations/mtr/statement/MCT_statement_Annex_5.pdf.

A8.72 EE noted that while 080 and 084/087 price overestimation seemed large in percentage terms, it often was not that great in absolute terms. It argued that it may therefore be that unless price misperception is eliminated in minimum absolute increments of 5ppm, 10ppm or 15ppm etc, there is absolutely no demand response. EE argued that demand curves are therefore likely to be kinked - something that EE said we had not tested. Consequently, EE considered our impact assessment to be highly unreliable as it is based on hypothetical extrapolations from survey evidence. Therefore, EE believed it was an unreliable predictor of the actual benefits likely to be realised from the implementation of our proposals in the real world.

A8.73 EE argued that the improvement in consumer price expectations between 2009 and 2011 have not been matched by increases in demand for NGCs over the same period. EE also highlighted the demand elasticity of -0.3 and suggested this would not be associated with material demand responses. Specifically, it noted evidence it provided to us in the context of a dispute regarding BT’s tiered termination charges[50] suggesting current prices for NGCs to 08x and 09 numbers are already set below profit maximising market equilibrium prices, due to the operation of a supposed "spillover effect" from the price of NGCs to other services (including subscriptions). We understand that, by this, EE means that our proposals may be expected to force expected prices and demand for NGCs even further away from equilibrium levels, creating allocative inefficiency.

A8.74 Finally, EE argued that we must factor in the potential for any increase in demand stimulated by a decrease in perceived NGC prices being outweighed by an increase in actual NGC prices under our proposals. EE noted that there was a real risk that NGC prices could increase under the unbundled tariff.[51]

Ofcom’s response

A8.75 In paragraph 13.54 of the April 2012 consultation, we set out evidence for why we considered there to be a link between a lack of price awareness and suppressed demand. Specifically:

- in the 2011 Consumer survey we asked respondents how many times in the last three months they had made, or considered making, a call to an 08 number that they did not know the cost of.[52] We then asked them to think about the last occasion this had happened and asked what type of service it was and what they did. 2% of respondents said they ultimately did not contact the 08 service and a further 1% used an alternative contact method (e.g. email). In addition, 33% of respondents said they kept the length of the call as short as possible;[53] and

- in the 2009 Consumer survey we asked respondents how often they would make a call to a non-geographic number that is not contained in their package and they also did not know the cost of.[54] We noted that only 21% of the respondents claimed that they would always make calls where there is a number not

As well as a quote from the OFT in paragraph 3.7 at the following link: http://www.oft.gov.uk/shared_oft/business_leaflets/ca98_guidelines/oft403.pdf

[50] Dispute between Everything Everywhere and BT regarding termination charges for 0844, 0843, 0871, 0872, 0873 and 09 number ranges (NCCNs 1101, 1107 and 1046) (CW/01088/03/12) - http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_01055/

[51] EE, April 2012 consultation response, p 12-14.

[52] 2011 Consumer survey, question GL05.

[53] 2011 Consumer survey, question GL08.

[54] 2009 Consumer survey, Q39.

contained in their package that they did not know the cost of. We also noted that the mean response implied that more than three fifths of calls in this category are not made.[55]

A8.76 This evidence indicates that some consumers are reluctant to make calls or are encouraged to shorten the length of the calls they make to non-geographic numbers when they are uncertain of the price of the calls. It follows from this that if they had better price information at the point of call, they would increase the frequency and duration of their calls to non-geographic numbers. We therefore disagree with EE that we failed to adequately substantiate the hypothesis that improved price awareness would result in a corresponding overall increase in demand for NGCs in general.

A8.77 EE made a number of specific comments regarding the 080 number range. On EE's remarks about Ofcom accepting in our base case that our proposals will not necessarily result in any overall increase in demand for calls to 080 numbers, we consider that EE has misrepresented our position. It is true that in our analysis of the TPE in the context of 080, we assumed that 080 call volumes would remain unchanged. However, in paragraph 16.133 of the April 2012 consultation, we clearly stated that this assumption was made for simplicity. Two paragraphs later (in paragraph 16.135) we stated that in practice, improved consumer price awareness and confidence may place upward pressure on 080 call volumes while some 080 SPs may change how they use non-geographic numbers (e.g. migrating to another range or closing their 080 service) which may place downward pressure on 080 call volumes. In paragraph A26.12 of the April 2012 consultation, we stated that the evidence did not provide a clear indication of the extent to which demand may rise. However, consistent with the evidence we have presented above, we considered that there would be an increase in demand, and, for the purposes of our calculations of the potential impacts, we conservatively assumed that overall 080 call volumes would rise by an estimated 1% to 5%. Therefore, although we assumed for simplicity that making all 080 calls completely free-to-caller would result in no change in volumes under one scenario, we observed that this was not consistent with what we considered would occur in practice.

A8.78 We accept that 080 calls are not particularly discretionary, relative to 09 calls. However we do consider that consumer demand for calls to these nonetheless exhibits some sensitivity to price. Our evidence for this is set out in Section 4.

A8.79 EE also interpreted our consumer survey evidence as suggesting that fixed to mobile substitution would not be that substantial. We have three comments on this interpretation.

A8.80 First, EE has misstated the survey results. The question that EE refers to is Q39 of the 2010 Consumer survey and reads: "If all calls to 0800 numbers were free from mobiles, there would be a cost to the operator. If your total bill stayed the same, would you like to have 0800 numbers free from your mobiles, even if your other calls (or line rental) became more expensive?". EE interprets the results as being about the volume of calls that will be made from mobiles, saying that 59% of respondents (who answered "no") would not call from mobiles if the price were zero, whereas 16% (who answered "yes") would like to make such calls. However, this question is not about callers' demand response to free mobile calls but rather one of

[55] We did not believe that the responses to this question gave a reliable indication of the scale of suppressed demand. However, they did give an indication of the direction of the effect, i.e. that some calls are likely to be deterred by a lack of price awareness or information.

the overall balance of prices that consumers pay across the market. A mobile user may prefer not to have free 0800 calls if it were to result in an increase in other prices. However, if 0800 prices were nevertheless zero-rated as a result of regulatory intervention, it does not follow that they would refrain from calling these numbers from their mobiles. Therefore, we consider that EE is wrong to use these results in this context.

A8.81 Second, we set out in detail why we did not consider we should place much weight on the result of this question (see paragraphs 16.127 to 16.131 of the April 2012 consultation). In summary, we considered that Q39 in the 2010 Consumer survey intended to ask about the 'price structure effect', i.e. even if the total amount that a particular consumer pays each month is unchanged, they may have preferences over the structure of mobile prices. However, we considered that the phrasing of the question made it difficult for respondents to think about the advantages and disadvantages of the price structure effect. Instead, it encouraged them to think about the 'overall price effect', increasing their suspicion that the overall price might rise. Therefore, we considered that the fact that the majority of responses were negative did not seem to provide reliable evidence of consumers' attitudes to the price structure effect. In footnote 38 of EE's response, EE argued that this evidence only mitigated the strength of the result at best – and that it certainly did not overturn it. However, EE did not explain why it believed this was the case and did not refute the evidence we put forward. We therefore see no reason change our view.

A8.82 Finally, we note that EE seems to place such weight on the answers to this hypothetical survey question even though it criticised our general use of survey evidence on the basis that this type of evidence is hypothetical and is not an accurate predictor of reality (this is discussed in further detail below).

A8.83 EE also made some specific comments regarding 084/087 numbers. On EE's point about the validity of using survey evidence to accurately predict consumers' behaviour in response to hypothetical situations, such evidence can be a useful guide although not in all cases and careful interpretation is often needed. We accept that there are limitations to using this kind of evidence and it is right to set out the appropriate caveats, as we and many other users of such evidence have done in the past (as can be seen in the quotations supplied by EE). We were clear to set out the limitations of our impact assessment in the April 2012 consultation. For example, in paragraph A16.2, we highlighted that our threshold estimates were "not intended to be precise. Their purpose is to help our assessment of the order of magnitude of the costs and benefits in question". In addition, we estimated a range of thresholds based on a number of different assumptions to allow for the possibility that actual responses might differ considerably from stated responses.

A8.84 We disagree that we need to construct kinked demand curves to analyse likely responses. If we compare 2009 expected prices[56] to 2009 actual prices, we see that the scale of price overestimation exceeds all of the absolute increments suggested by EE. For example, Table A16.8 of the April 2012 consultation illustrates that, in terms of consumer price overestimation, the gaps between actual and expected prices on 084/087 number ranges were between 17 and 31ppm. Therefore, if EE's argument was that there would only be a significant demand response if price misperceptions were corrected in minimum absolute increments of

[56] Rather than relying on 2011 prices which, as we explain above in paragraph A11.17, are likely to understate the scale of consumer price overestimation.

5ppm, 10ppm or 15ppm, a demand response is likely even if only a proportion of the overestimation is removed.

A8.85 EE also refers to the existence of a supposed "spillover effect" from the price of NGCs to other mobile services (including subscriptions) and suggests that this effect means the price of NGCs is already below the competitive level. It claims that, as a result, our proposals may be expected to force expected prices and demand for NGCs even further away from equilibrium levels, generating allocative inefficiency. In doing so, EE appears to be suggesting that bringing consumers' expectations of prices in line with actual prices, which it considers to be below the efficient level already, would lead to an over-consumption of NGCs.

A8.86 We do not accept this point for a number of reasons. Firstly we note that the mechanism outlined by EE does not appear to make sense. We consider that, as a general principle, where spillovers in demand exist it is more efficient for these spillovers to be reflected in prices. We therefore do not agree spillovers in demand would lead to prices being set below the efficient level and an excessive level of consumption (if consumers were accurately informed about the price level). Furthermore, we have seen no evidence to suggest that such a spillover effect exists. In fact, we consider that consumers' lack of price awareness of NGCs under the status quo is likely to mean the price of NGCs is not taken into account when consumers make their subscription decision. We also consider this same lack of transparency is likely to mean that the price of NGCs is above the level that we would expect if consumers were better informed about prices, not below this level as we set out in Section 4 when we discuss the fact that prices do not reflect consumer preferences. As a result, we do not accept that bringing consumers' expectations of prices more closely in line with actual prices will lead to over-consumption of NGCs as suggested by EE. Instead, we continue to consider it would alleviate currently suppressed levels of demand.

A8.87 We agree that the value of elasticity we used for the purposes of our impact assessment (-0.3) reflects relatively inelastic demand. However, it is also consistent with there being at least some demand response following a change in price. The results of our modelling illustrated that only a relatively small increase in demand for NGCs is necessary in order for the benefits of the unbundled tariff to outweigh the costs. Such a demand response is likely to arise even if demand is relatively inelastic given the magnitude of the differential that currently exists between consumers' perceptions of prices and actual prices, a differential we expect to narrow under the unbundled tariff.

A8.88 On the risk that NGC prices could increase under the unbundled tariff, we respond to this comment in relation to the assessment of the unbundled tariff in paragraphs 9.14 to 9.26 of Section 9, as well as in Annex 20 (in Part B) where we discuss stakeholder comments on the single AC.

A8.89 Overall we do not accept EE's criticisms of our analysis of suppressed demand. Consumer survey evidence suggests there is a link between a lack of consumer price awareness and suppressed demand for NGCs. It follows from this that if consumer price awareness were to improve, consumers would make more NGCs. We accept that the nature of services on the 080 and 084/087 number ranges are less discretionary relative to 09 numbers, but evidence still suggests that demand is suppressed on these ranges.

Alternatives to NGCs

Stakeholder comments

A8.90 Finally, EE noted that there were cheaper and less harmful ways of stimulating demand for NGCs. EE considered that we had failed to establish that any stimulation of additional demand for NGCs was a worthwhile endeavour, given the many and increasingly popular alternatives to the use of these services such as web browsing and online content services, mobile "apps" and mobile voice and SMS short codes. EE did not believe that we had demonstrated that our proposals were necessary or proportionate for the protection of consumers to an extent adequate to legally empower us to implement those proposals.[57]

Ofcom's response

A8.91 The alternatives to services provided via NGCs that EE lists, such as web browsing, online content services and mobile apps, are primarily only suitable alternatives for calls to 09 numbers which make up only a very small fraction of total NGCs (2% of total volumes in 2010). The alternatives that EE lists are not always suitable substitutes for the majority of services provided via other NGCs such as bank helplines, government helplines and other socially important services. We assess the potential for mobile voice shortcodes to address the problems we have identified in the market in paragraphs A8.116 to A8.123 below.

A8.92 We discussed the legal powers we rely on and the proportionality of the decisions we are minded to take in Section 6.

The relative price of NGCs

Stakeholder comments

A8.93 EE, Three and Vodafone challenged our findings that the relative prices of NGCs and GCs do not reflect consumers' preferences. Otherwise, stakeholders were in broad agreement with our conclusions.

A8.94 EE said it remained of the view that the relative prices of NGCs as compared with the price of calls to other number ranges did appropriately reflect the preferences of UK consumers.[58] It expressed concerns about the "somewhat speculative nature" of our analysis. It argued that what "seems right" in theory was not necessarily always what was right in practice. Absent real world data to support a clear case for the need and net benefit of intervention, EE argued that the prudent course was to refrain from acting. It argued that if we were genuine in our desire to ensure that prices reflected consumer preferences, then EE would continue to urge us to prefer the option of creating a new 'freephone' range over mandated changes to the 080 range. Specifically, EE argued that mandating that 080 calls are zero-rated would definitely result in forced changes to mobile OCP tariff structures that did not reflect the preferences of some, if not the majority, of consumers.[59]

A8.95 EE also commented on the extent to which the unbundled tariff would lead to call prices which reflected consumer preferences on the 084/087, 09 and 118 number ranges. These comments are set out (and responded to) in Part B, Annex 20.

[57] EE, April 2012 consultation response, pp.14-15.
[58] EE, April 2012 consultation response, p.4.
[59] EE, April 2012 Consultation response, p15.

A8.96 Vodafone commented that we could not say with any confidence by how much prices were 'too high'. Vodafone argued that calibrating this empirically was inherently difficult especially because relatively high prices for NGCs compared to GCs were consistent with both 'efficient' and 'distorted' pricing. Vodafone argued that prices were likely to be relatively high anyway and it was very difficult to accurately compare prices 'before' and 'after'.[60]

A8.97 Three disagreed with Ofcom's interpretation of the evidence, specifically our dismissal of consumer survey evidence which seemed to suggest that most consumers did not favour tariff re-balancing.[61]

Ofcom's response

A8.98 EE did not agree with our analysis and contended that it was speculative and lacking in real world data. Firstly, as set out in paragraph A8.329 of the April 2012 consultation, we recognise that it is difficult to make accurate and reliable inferences from current consumer behaviour and current prices due to the market failures we have identified. Therefore, we need to be cautious about how data is interpreted. However, we disagree that our analysis is speculative and lacking in real world data – our analysis is based on evidence (for example from Consumer surveys and the 2010 Flow of Funds study) and we have used real world data that we consider to be reliable when available to us. Further, there is consumer and SP demand for a free-to-caller number range as illustrated by responses to the Consumer and SP surveys (see paragraphs 13.38 and 13.58 in Section 13 (Part C) where we discuss this evidence). EE provided no countervailing evidence that would undermine our view and therefore we see no reason to alter our original position. EE also commented on our proposed remedies which we address in our discussion of the option of making 080 free-to-caller Annex 29.

A8.99 We agree with Vodafone that it is difficult to estimate by how much prices are 'too high'. However, we do not consider that producing estimates of by how much NGC prices exceed the efficient level is necessary. In the presence of the three market failures we have identified, in our view it is likely that prices are not currently set at the efficient level.

A8.100 Other than merely stating that it did not agree with our interpretation of Q39 of the 2010 Consumer survey, Three gave no explanation for why this was the case. Therefore we cannot see a clear reason for changing our original view on the result of this particular survey question, as set out in paragraphs 16.125-16.131 in Part C, Section 16 of the April 2012 consultation.

Loss of access to socially important services, particularly for vulnerable consumers

Stakeholder comments

A8.101 EE remained of the view that we had overstated concerns about the extent to which current prices and/or perceptions of prices for NGCs were causing a lack of access to those services. EE considered that the likely benefits of our proposals in facilitating access to such services were therefore also overstated.[62] EE also

[60] Vodafone, April 2012 consultation response, p.15.
[61] Three, April 2012 consultation response, pp.44-45.
[62] EE, April 2012 consultation response, p.5.

argued that our proposals may in fact have a detrimental impact on all customer groups, especially vulnerable customers.[63]

A8.102 O2 noted that we appeared to be focussed on the extent to which vulnerable consumers lose access to socially important services, rather than the price customers pay for accessing those services. It argued that there was little analysis on the extent to which vulnerable customers were denied access and therefore it said it was difficult to draw any positive conclusions about the extent to which our proposals were likely to have a positive impact on vulnerable consumers and it could not agree that they would have a positive impact.[64]

Ofcom's response

A8.103 Whilst EE commented that our concerns were overstated, it did not provide any new reasoning as to why it considered this was the case nor any new evidence in support of this view beyond the points which we respond to elsewhere in this Annex. Therefore, we see no reason to alter our original conclusions with respect to the unbundled tariff or making 080 free-to-caller. In response to O2's point about access to socially important services, we set out in detail in Annex 8 of the April 2012 consultation our concerns about vulnerable consumers' access to socially important services. We stated that the price of calling these services was one of the reasons which might deter vulnerable consumers from accessing the service and we therefore disagree that the price is not part of our focus under this criterion. In addition, we outlined evidence from the CAB of vulnerable consumers being deterred from accessing these services because of either high prices, or expected high prices.[65] We therefore consider we have provided an explanation of the concerns relating to vulnerable consumers' access to socially important services and we set out in Section 8 (in relation to the unbundled tariff) and Section 13 (in relation to making 080/116 free-to-caller) why we consider our interventions will address these concerns, in particular by improving vulnerable consumers' price awareness of NGCs.

A8.104 EE also commented on the impact of our proposals. We deal with these comments in the sections highlighted above.

Loss of service diversity and innovation

Stakeholder comments

A8.105 Again, EE was the only respondent to set out a significant challenge to our findings in this area. It disagreed that our proposals will lead to falling prices or service innovation. It noted that we considered NGCs to be strongly price inelastic (-0.3) and this suggested a low likelihood of such benefits arising. EE commented that, as a result, we should heed the warnings given in the CAT 08X Judgment, and place very little weight on benefits from improvements in service provision on non geographic number ranges.[66]

[63] EE, April 2012 consultation response, pp.18-20.
[64] O2, April 2012 consultation response, p.12.
[65] See paragraphs A8.387 to A8.400 in Annex 8 of the April 2012 consultation.
[66] EE, April 2012 consultation response, p.16.

Ofcom's response

A8.106 With respect to the CAT 08X Judgment, we note that there is a distinction between an effect on SPs' investment incentives driven by revenue, i.e. the SP receiving a share of increased termination charges, and an effect driven by call volume increases. The CAT's comment was made in relation to the former[67] whereas, as noted in Annex 11 of the April 2012 consultation, we are relying on the latter.[68] In the April 2012 consultation, we noted that whilst an increase in SP revenue alone may lead to an increase in innovation, there was also the possibility that this revenue would be retained by the SP (see paragraph A8.462). Instead, we emphasised that suppressed call volumes and the lack of SP control over retail prices were the main mechanisms through which we considered the status quo was harming innovation by SPs on non-geographic number ranges (see paragraph A11.5 of the April 2012 consultation).

A8.107 With respect to EE's comments regarding the price elasticity of demand for NGCs, we deal with this issue in paragraph A8.87 above. In summary, we consider that even if demand for NGCs is relatively inelastic, there is likely to be at least some sensitivity to price and thus scope for some increases in volumes.

A8.108 Therefore we consider that our argument – that there is a loss of service diversity and innovation currently in the market for NGCs – still stands.

General comments

A8.109 Some more general comments were made on our retail concerns, rather than on specific issues we had raised in the April 2012 consultation.

Stakeholder comments on mobile voice shortcodes

A8.110 O2 commented that a lack of ubiquitous retail price points had limited the attractiveness of mobile voice shortcodes ('MVSCs') to SPs until now. However, more recently, it noted that a greater number of common price points had become available. O2 said that SPs could offer a single, clear price point for both fixed and mobile customers if they want to by using an MVSC because mobile providers had individually created retail price points for MVSCs that aligned with BT's retail charges. O2 commented that this meant SPs were able to select common prices for their services.[69]

A8.111 O2 disagreed with Ofcom's analysis in general on the basis that it claimed MVSCs were an effective means of solving the problems we had identified in the retail markets for NGCs. Specifically it argued:

- MVSCs allowed service providers easily to make services available to consumers at common prices;
- aggregators act as intermediaries between SPs and mobile OCPs, reducing transaction costs. In this way, O2 commented that MVSCs were an effective means to "internalise" the vertical externality; and

[67] 08X CAT Judgment, paragraphs 223(2) and 349.
[68] Indeed for 080 we are effectively decreasing SPs wholesale revenues by increasing the origination charge.
[69] O2, April 2012 consultation response, p3.

- the "horizontal externality" issue was rendered obsolete because, with improved information provision properties inherent in MVSCs (that aligned to BT's prices for fixed line calls), there was significantly less need for traditional non-geographic numbers to convey pricing information.[70]

A8.112 O2 argued that as a result of this, the market had seen a "sharp increase" in interest and demand for MVSCs. O2 referred to examples of MVSCs being used in peak-time terrestrial television shows. For example, O2 referred to comments made by the BBC and ITV about why they were attracted to the use of MVSCs. O2 also commented that banks and utility companies had expressed considerable interest in the MVSC proposition.[71]

A8.113 O2 noted that MVSCs with a broad range of ubiquitous retail price points were a relatively new phenomena, but the early indications were that they were effective in providing SPs with the ability to offer services at a common simple price point, and that consumers had responded positively to that development. O2 argued that market participants could respond to the market failures we found through the adoption of MVSCs if they wanted to and, thus, Ofcom intervention was unnecessary and not objectively justifiable. By ignoring MVSCs and choosing to implement the unbundled tariff instead, O2 commented that Ofcom was:

- proposing measures that involved the imposition of burdens which were unnecessary, contrary to its duties as set out in section 6(1) of the Act;[72] and

- ignoring a demonstration of how the market was evolving self-regulation to generate benefits for consumers, overlooking its duty to have regard to the development and use of effective forms of self-regulation as set out in section 3(4)(c) of the Act.

A8.114 O2 also argued that the introduction of the unbundled tariff would "*completely undermine*" the benefits that MVSCs have generated because it would remove the focal point of a single BT retail price point and, accordingly, the capability for SPs to offer a single price point to consumers. O2 therefore submitted that Ofcom was:

- eliminating a consumer benefit that the market has delivered, contrary to its principal duty to further the interests of consumers in relevant markets, where appropriate by promoting competition (section 3(1)(b) of the Act); and

- proposing measures that would stifle innovation (section 3(4)(d) of the Act) in the development of effective and less intrusive competitive responses to the harms Ofcom has identified.

A8.115 EE also commented on the suitability of shortcodes as a viable solution to the problems in the market. In particular, it proposed the use of zero rated mobile shortcodes. EE noted that it had only very recently (in June 2012) launched the use of zero rated mobile shortcodes across both of its Orange and T-Mobile brands. It said it expected that that recent change to EE's commercial arrangements would have a noticeable impact on the popularity of zero rated mobile voice shortcodes across the industry.[73]

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[70] O2, April 2012 consultation response, p6-7.
[71] O2, April 2012 consultation response, p6-9.
[72] O2, April 2012 Consultation Response, p3-4.
[73] EE, April 2012 consultation response, p.9.

Ofcom's response

A8.116 We discussed mobile shortcodes in Annex 13 of the April 2012 consultation. In paragraph A13.3, we discussed two distinct types of mobile shortcode – SMS shortcodes and voice shortcodes. O2 and EE's responses specifically concerned the latter – otherwise known as mobile voice shortcodes ('MVSCs'). MVSCs are five digit shortcode that mobile users can call instead of a standard geographic or non-geographic number. We do not regulate MVSCs and they are not designated in the Numbering Plan. They are only accessible by mobiles and are not contactable from a fixed line – commonly, fixed callers must call a separate non-geographic number which is often presented alongside the MVSC in an advert for the service.[74] MVSCs are typically used for specific voting campaigns or competitions but, in theory, there is no practical reason why these numbers could not be used for other purposes.

A8.117 MVSCs offer the opportunity for SPs to advertise a unique price point to their customers. This is because the major mobile OCPs offer a fixed range of price points that are available on MVSCs (although we understand some OCPs offer a wider range of price points than others due to billing systems limitations), and an SP can choose any tariff from this range for a particular shortcode (typically employing an aggregator to liaise with each of the mobile OCPs to activate the shortcode). As the MVSCs are often aligned with BT's retail price points, the SP can therefore advertise a non-geographic number for fixed line callers and a MVSC for mobile callers with the same retail charge (albeit that retail charge will only be relevant for fixed callers from a BT line).[75]

A8.118 We recognise that MVSCs have features, which, if they were to be adopted more widely, might in some circumstances act to mitigate some of the concerns we have identified in the market for NGCs. For example, by aligning retail price points for MVSCs with BT's retail charges (which are also followed by other fixed OCPs) it means that MVSCs may help to provide a simpler price message (than the status quo). They could therefore provide some mitigation for the lack of consumer price awareness and the vertical externality we have identified. We also recognise there is anecdotal evidence to support their growing popularity amongst SPs active on the 09 number range, and recognise the lack of take-up to date for similar services on the 08 number range may reflect the fact that lower price points have not been available from all mobile OCPs until recently.

A8.119 However, we are also aware that take-up of MVSCs remains very low overall and that there are features of MVSCs which are less helpful in addressing the consumer harms we have identified and may act as a barrier to their wider adoption, particularly in the 08 number ranges. In particular:

- consumers have very poor awareness of the price of MVSCs (even poorer than awareness of NGC prices) and lack confidence in them. For example, 84% of survey respondents did not know the price of MVSCs, which compares to 71%, 56% and 51% of mobile callers who did not know the price of 09, 0870 and 0845 calls respectively.[76] Further, in paragraph A8.183 of the April 2012 consultation, we noted there were some indications that MVSCs were not well understood by consumers who generally associate them with premium rate services. This view

[74] However, in some cases, SPs only advertise an MVSC as they do not anticipate any fixed callers.
[75] However, we note that some fixed OCPs may not adopt the same retail prices points as BT, which would lead to some differentiation in fixed call prices. This is discussed further below.
[76] 2009 Consumer Survey, Q44: "How much do you think it costs to call the following types of numbers from your mobile phone at home during the daytime on a weekday?"

was supported by discussions with PhonepayPlus ('PPP') and a shortcode aggregator. The aggregator also noted that SPs and to some extent consumers sometimes associate MVSCs with scams (although the aggregator noted that confidence was growing as MVSCs were being used more widely); [77]

- where MVSCs are used in conjunction with a non-geographic number, there is potential for them to exacerbate rather than improve consumer price awareness. That is because the non-geographic number will continue to be accessible from a mobile and mobile callers will therefore face potentially two prices for calling a service – that charged for calling via the MVSC and that for calling the non-geographic number from their mobile. Explaining this may only add to consumer confusion and contribute to distrust of both non-geographic numbers and MVSCs;

- MVSCs do not improve price awareness for mobile customers who do not have price information at the point of call. This is because there is no link between a MVSC prefix and the price of that shortcode[78], so there is no scope for a consumer to infer what the price of the call could be by learning the maximum price of a particular number range over time;

- MVSCs do not address our concerns about price awareness for fixed line customers. Fixed OCPs do not necessarily always adopt the same pricing structure as BT (nor is there any obligation on them do to so). Although MVSCs may offer price points which are aligned with BT's pricing, there is no guarantee that other fixed OCPs will necessarily price calls in a similar way;

- it may be more costly to operate a service using an MVSC than it is using a non-geographic number. A PPP report indicated that this was the case.[79] We also understand from discussions with PPP an aggregator that the revenue share arrangements tend to be less favourable for SPs using MVSCs than they are for SPs using 09 numbers.[80] In addition to this, SPs using MVSCs also have to pay the mobile OCPs an access charge for use of the MVSC which we understand is usually around £100 per month. We understand that similar arrangements apply regardless of the level of revenue share involved (i.e. the same charges would apply for a MSVC with a lower revenue share element)), and SPs have to pay an additional charge (as well as the monthly access charge) of between [✂] for a free-to-caller shortcode.[81] Finally we note that if an SP expects both fixed and mobile callers, it may incur costs from operating two numbers simultaneously

[77] [✂]

[78] The shortcode prefixes available across the major mobile OCPs are set out in the Code of Practice for common shortcodes (published by the shortcode management group): http://www.short-codes.com/media/Co-regulatoryCodeofPracticeforcommonshortcodes170206.pdf, see page 4 in particular. Whilst different prefixes are reserved for different types of services these do not appear to be linked to particular price points. We understand from our discussions with a shortcode aggregator that an SP can choose any tariff (from those available in the fixed range) for a particular shortcode. The aggregator will then provision that shortcode with each of the mobile OCPs individually in order to activate it.

[79] 2010 PPP Report, pp. 112-113, section 5.2.2. In particular the report noted that MVSCs were "generally more expensive to set up and rent than traditional '09' premium rate numbers".

[80] Specifically we understand that mobile OCPs usually pass around 60-65% to the aggregator, who typically keeps around 5%, leaving approximately 55-60% for the SP. This was contrasted to revenue share on 09 numbers, where we were told that an SP operating on a £1.53 price point would typically receive around £1.20, whereas an SP operating the same price point on a shortcode would receive less than £1.

[81] Information provided by PPP at a meeting with Ofcom on 14 October 2011.

(one non-geographic number and one MVSC) over and above the additional costs of using an MVSC as a substitute for a non-geographic number. The greater overall cost of using MVSCs may therefore mean they are not attractive or even viable for some SPs; and

- it is possible that some SPs may be reluctant to advertise more than one contact number, which would be required if the SP expects to have fixed and mobile callers. The greater the amount of space taken up in advertising (for example print or TV ads) by additional wording to describe the methods of contact (i.e. "calls cost Xp from a mobile and BT landline, if you are calling from a fixed line use this number xxx, if you are calling from mobile use this number xxx") is likely to create additional costs for SPs (or at least cause them to have to remove other messages that they might otherwise have found beneficial to include in the advertising). As noted above, there may also be a case for explaining that calling the non-geographic number from a mobile will be charged differently and this again will add to cost and complexity.

A8.120 In addition, we consider that one of the key characteristics of MVSCs, namely that they are only available from mobiles, is a significant concern given our duties under the Common Regulatory Framework. Specifically, we have a duty under section 4 of the Act to carry out our numbering functions in accordance with the six Community requirements. These include requirements:

- to secure that our activities contribute to the development of the European internal market; and

- to take account of the desirability of carrying out our functions, so far as practicable, in a manner which does not favour one form of electronic communications network or service over another.

A8.121 In relation to the first of these requirements, the Universal Service Directive specifically identifies the ability of end users to access "all numbering resources in the Community as a *vital pre-condition* for a single market" (emphasis added).[82] Unlike non-geographic numbers, MVSCs are not accessible to end-users calling from a fixed line. While we do not regulate MVSCs, we have significant reservations that it would be consistent with our duties under section 4 to rely on them (and thereby encourage their take up) as a mechanism for addressing consumer harm arising from the use of non-geographic numbers.

A8.122 In light of this conclusion, we do not accept O2's submission that the introduction of the unbundled tariff would impose an unnecessary regulatory burden (contrary to section 6(1) of the Act). We consider that our regulatory intervention is necessary, as other forms of regulation or commercially developed approaches that we have considered (including MVSCs) will not adequately address the harms we have identified. O2 has also highlighted section 3(4)(c) of the Act, which requires us to have regard, to the extent we consider it relevant in the circumstances, to the desirability of promoting and facilitating the development and use of effective forms of self-regulation. We have had regard to this factor in our assessment of MVSCs. However, for the reasons set out above, we nevertheless consider that MVSCs would not be an effective substitute for regulatory intervention in this instance. Furthermore, as explained above, we have significant reservations as to whether it would be consistent with our duties under section 4 of the Act to rely on a

[82] Recital 38, Universal Service Directive.

numbering resource which is not accessible to fixed users as a mechanism for addressing consumer harm arising from the use of non-geographic numbers.

A8.123 O2 also argued that the unbundled tariff would undermine the consumer benefits that MVSCs have generated, by removing the focal point of a single BT retail price point. We respond to this point in Annex 19 (in Part B) as well as O2's comment that this would be contrary to our duties to further the interests of consumers and to encourage innovation.

Stakeholder comments on other issues

A8.124 BT broadly agreed with our analysis of retail market concerns. However, on fraud, BT disagreed that this was limited to just 070 and 076 numbers. It commented that fraud can and does happen on a variety of number ranges including, for example 09, but fraud is dealt with more effectively on this range. BT also argued that, contrary to our findings, consumer confidence in NGCs and call volumes is in fact worsening.[83]

A8.125 Vodafone was broadly supportive of our proposals. However, Vodafone commented that, against a background of piecemeal regulatory intervention, we should be cautious about justifying further intervention on the basis of perceived market failure. In doing so, Vodafone did not deny the possibility of market failure. Rather its point was that it was necessary to do more than just identify and describe a possible source of market failure to justify regulatory intervention.[84]

A8.126 Virgin argued that, inherent in the design of our “unbundling” solution, was a belief that there is consumer harm which is driven by a lack of information. Virgin commented that we had misinterpreted the data and the underlying problem is a lack of understanding of NGC services and what the charges for those services represent. It argued that the answer to that lack of understanding lay in educating consumers rather than merely exposing them to yet more information.[85]

A8.127 EE considered that our evidence and analysis revealed the retail market for NGCs in the UK to be a competitive, albeit imperfect, market in need perhaps of fine tuning, but not warranting any major structural forms of regulatory intervention such as those we proposed.[86]

Ofcom's response

A8.128 We accept that there have been instances of fraud on some non-geographic number ranges other than 070/076. However, these have been less common and, as BT pointed out, one of the reasons for this could be explained by effective remedies put in place by PhonepayPlus. In the context of this document, we do not consider that this changes our view (set out in A8.438 of the April 2012 consultation) that fraud is not a significant concern on ranges other than 070 and 076 (on which we intend to publish separate proposals – see Section 2).

A8.129 On trends in consumer confidence and call volumes, we accept that call volumes are falling.[87] However, we have seen no evidence to say that consumers' price

[83] BT, April 2012 consultation response, pp.5-6.
[84] Vodafone, April 2012 consultation response, p.6.
[85] Virgin, April 2012 consultation response, p.1.
[86] EE, April 2012 consultation response, p.7.
[87] In paragraphs 4.69 and 4.71 of the April 2012 consultation, our drafting implied that NGC volumes were not falling. This was an error on our part and this was not consistent with our approach

awareness is getting worse over time. The questions we asked in the 2009 and 2011 Consumer surveys to measure the extent of price overestimation were structured and worded differently so we cannot compare responses over time directly in this way.

A8.130 We agree with Vodafone that merely identifying and describing possible market failures is not sufficient to justify intervention. However, we do not consider this an accurate description of our approach. We have concluded that there are actual, not hypothetical, market failures based on the evidence available to us and we have assessed a range of possible responses to these. We conducted an analysis of the probable impact of our proposed interventions on market participants, and found that the benefits from intervention were likely to exceed the costs.

A8.131 Virgin made a similar comment about the underlying problem in its response to our December 2010 consultation. See paragraphs A8.50 to A8.51 in Annex 8 of the April 2012 consultation where we set out our previous response to this comment. On Virgin's point about educating consumers, we agree that consumers need to be better informed about the price of NGCs in order to make better decisions. We consider that the unbundled tariff will be an effective means of helping consumers understand what the charges for NGC services represent as it will highlight the difference between the charge for accessing the service and the charge for the service itself. Further, as part of the overall package of measures which will rationalise charges for non-geographic number ranges, it should help consumers to better understand what ranges attract charges and the magnitude of those charges. (See Section 8 where we discuss these benefits in further detail).

A8.132 As set out above, we do not agree with most of EE's detailed challenges to our analysis. We consider that there are some significant market failures in existence that are inhibiting the efficient operation of the retail market. Consequently, we consider that significant structural reforms are required at the retail level.

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elsewhere in the document. We accept that NGC volumes are indeed falling and this was taken into consideration in our impact assessment (see, for example, paragraph A16.48 in Part B, Annex 16).

Part A - Annex 9

Wholesale concerns

Introduction

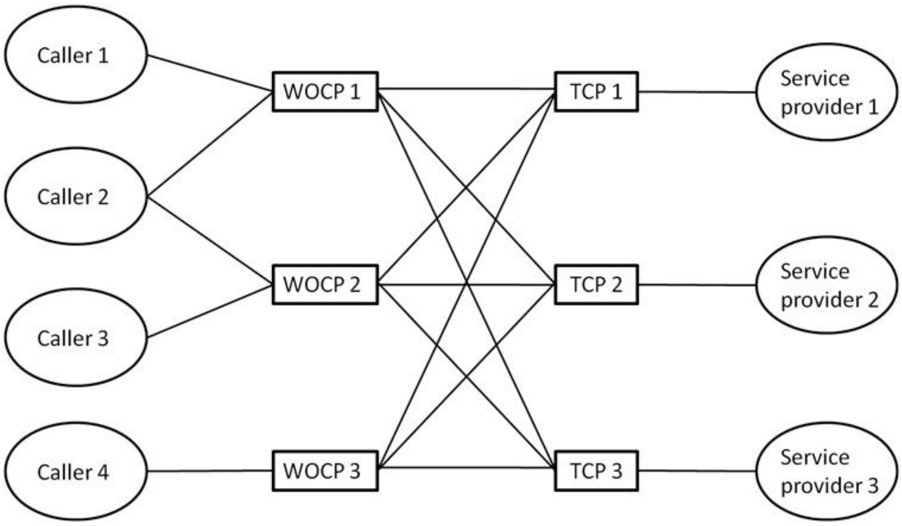
A9.1 This Annex sets out a summary of stakeholder comments on the wholesale concerns in the NGC market made in response to the April 2012 consultation. Our position on these concerns remains unchanged from the view we set out in the April 2012 consultation and we set out the reasons for this below.

Ofcom's position in the April 2012 consultation

A9.2 In Annex 3 of the December 2010 consultation, we set out in detail our understanding of the operation of the wholesale market and this was updated in Annex 10 of the April 2012 consultation. In both consultations we analysed the current performance of the NGC market at the wholesale level by applying the modified Greenfield approach. This meant that, for the purposes of the substantive analysis in Annex 10 of the April 2012 consultation, we disregarded the NTS Call Origination Condition and our dispute resolution powers. This approach allowed us to understand the underlying commercial relationships between wholesale OCPs ('WOCPs') and TCPs.

A9.3 In paragraph A10.11 of the April 2012 consultation, we commented that predicting outcomes of wholesale negotiations in these circumstances was complicated, in part because there were large numbers of heterogenous WOCPs and TCPs, each in different commercial positions. The diagram below (reproduced from the December 2010 consultation) illustrates the range of different connections between each of the parties involved in conveying a call.

FigureA9.1: Illustration of connections between callers, WOCPs, TCPs and SPs[88]



A9.4 In assessing the WOCPs' and TCPs' relative negotiating strength we considered the attractiveness of the 'fallback position' for TCPs and WOCPs if no agreement was reached, a caller's reaction to higher termination rates and the impact of vertical integration. We said the following on each:

- **Fallback position:** it is clearly unattractive for TCPs if WOCPs did not originate calls to them, however, as in the case of the WOCPs fallback position, the evidence was not clear cut as to how unattractive that fallback position was for TCPs. We said the larger the WOCP the more detrimental the consequences for the TCP of a refusal by the WOCP to originate calls. We said the proportionate effect of an SP switching away from a TCP as a result would be large because the TCP would lose incoming calls to that SP from all WOCPs, not just the specific WOCP in question. For WOCPs we noted that the possibility that callers became unhappy with their current ROCP and switch their subscription elsewhere made it risky for OCPs to refuse to originate non-geographic calls and whilst the extent of caller switching was uncertain, the proportion effect of it on the WOCP was relatively large (because the WOCP would lose all of that consumer's purchases, not just NGCs);[89]

- **Reaction to higher termination rates**: our provisional conclusion was that the evidence on how callers would react to higher termination rates was mixed. Evidence from previous reviews suggested that, while a significant proportion of callers were locked into a particular SP, such calls are nonetheless in the minority. However, this evidence was not complete.[90]

- **Impact of vertical integration**: we considered that vertical integration strengthened a TCP's position since callers might switch to the vertically integrated company's retail OCP business (in response to either higher termination rates or a failure to reach agreement). Similarly we said that vertical integration strengthened a WOCP's position since switching by callers (to

88 For simplicity this diagram shows four callers, one of which (caller 2) uses two WOCPs (e.g. a fixed network and a mobile network). Similarly this diagram only shows three WOCPs, TCPs and SPs (and does not show retail OCPs, transit operators or resellers of hosting services).
89 See paragraph A10.52 of the April 2012 consultation.
90 See paragraphs A10.53-A10.54 of the April 2012 consultation.

different SPs) and by SPs (to different TCPs) might reinforce the vertically integrated TCP business.[91]

A9.5 Overall our position in the April 2012 consultation remained unchanged from the December 2010 consultation. In particular, we were not confident that the termination rates that would arise commercially (absent regulation or involvement by Ofcom) were likely to lead to desirable outcomes for consumers. More specifically, we considered that:

- in the absence of ex-ante regulation, WOCPs and TCPs would negotiate over the level of termination rates.[92] We noted there were inherent tensions in the relationship between WOCPs and TCPs: WOCPs always prefer lower termination rates whereas TCPs generally prefer higher termination rates;

- predicting the outcome of negotiations in these circumstances was complicated because there were a large number of WOCPs and TCPs who differed considerably in terms of their relative market shares and business models. Our analysis of the factors that influenced their negotiating strength suggested that different WOCPs and TCPs were likely to be in different commercial positions relative to one another. In other words, negotiations would depend upon the particular WOCP and TCP involved, rather than one side consistently being in a strong position. As a result, commercial negotiations were likely to produce a range of termination rates that depended on the parties involved;

- there were a number of factors influencing negotiating strength, in particular:

    - WOCPs accounting for a high share of wholesale call origination would likely be in a stronger position than WOCPs accounting for a low share of call origination;

    - similarly, TCPs accounting for a high share of termination would likely be in a stronger position than TCPs accounting for a low share of termination; and

    - vertically integrated firms would likely be in a stronger position than vertically separate firms of comparable size.

- BT was likely to be in a strong position, both in its role as a WOCP and its role as a TCP. We also considered that CWW, the second largest TCP, was likely to be in a strong position when negotiating with smaller WOCPs (albeit not when negotiating with BT). Similarly, TalkTalk and Virgin Media, the second and third largest WOCPs, were likely to be in a strong position when negotiating with smaller TCPs (albeit not when negotiating with BT). We recognised that mobile OCPs' currently account for a smaller share of non-geographic call origination, compared to calls more generally. Nonetheless we considered that EE, Vodafone and O2 may be in a strong position when dealing with the smaller TCPs.

[91] See paragraph A10.55 of the April 2012 consultation.

[92] A WOCP supplies wholesale call origination to retail OCPs. The focus of this Annex is the relationship between WOCPs and TCPs because TCPs supply termination of NGCs to WOCPs. See Figure A10.1 in Annex 10 of the April 2012 consultation which provides an overview of the supply chain. It is important to note, however, that the flow of funds in the supply chain is different for calls which are Freephone or free-to-caller (e.g. 080, 0500 and 116 numbers), because there is no money passing from the WOCP to the TCP, instead a payment is made in the other direction. See Annex 30 where we discuss the wholesale regulation of 080 and 116 numbers.

A9.6 In terms of the impact on consumers, we considered that in the absence of regulation or involvement by Ofcom:

- some WOCPs might be able to drive termination rates down to a particularly low level. In the long run this would result in detrimental effects for SPs, harming service provision and innovation, which would not be offset by significant benefits for callers;

- some TCPs may be able to set high termination rates that allow SPs to exploit features such as weak competitive constraints on the price of their service. This would result in higher retail prices for non-geographic calls. If competition in hosting were effective, the proceeds were likely to be passed through to SPs. This was the opposite of the outcome described in the preceding bullet point – it would result in the balance of prices between callers and SPs being tilted in the SPs' favour (although we recognised there may be some offsetting benefits to callers through SPs having improved incentives to enhance service availability, quality or innovation); and

- different TCPs were likely to negotiate different termination rates. Over the longer term, this asymmetry between TCPs was likely to lead to consolidation in hosting. We found this could potentially harm competition at that level, which would have detrimental impacts for both SPs and callers.

A9.7 We noted that the one possible change in our analysis since the December 2010 consultation was on the subject of whether TCPs were unable to identify the network on which transited calls ultimately originated. We considered that it was unclear whether this was the case, particularly as TCPs were setting bespoke termination rates at the time (which indicated that TCPs believed that they could identify WOCPs with a reasonable degree of accuracy), but on the other hand, those rates were a recent development and industry may not yet have had the opportunity to fully work through the practicalities (including the scope for transit to be used to conceal the identify of the WOCP that originates a call). Therefore we said we could not rule out the possibility that, for transited calls, some TCPs might be unable to identify the WOCP. In these circumstances, we considered that smaller WOCPs might be able to secure comparable termination rates to those paid by the large transit providers. However we argued that this would not alter our view that there were likely to be significant imbalances in wholesale negotiating positions. Nor did it alter our view that these imbalances could lead to detrimental effects for consumers.

A9.8 Overall, we remained of the view that we were not confident that the termination rates that would arise commercially (absent regulation or involvement by Ofcom) were likely to lead to desirable outcomes for consumers.[93]

Stakeholder comments

A9.9 Comments on our wholesale concerns centred on who had market power over the termination of NGCs. In general, the mobile operators (themselves WOCPs) argued that TCPs enjoyed a position of relative strength in the market for NGC termination, whilst BT (a TCP as well as an OCP) argued that the bargaining power lay with WOCPs. We have summarised stakeholders arguments on these two points in turn below.

[93] See Annex 10 of the April 2012 consultation, in particular paragraphs A10.123 to A10.128.

Fixed TCPs have SMP in NGC termination

A9.10 EE considered that there was likely to be real harm to consumers arising from wholesale termination charges for NGCs. It noted that the current impact of 'ladder style' termination charges was muted due to ongoing disputes and appeals but it considered that this should not be taken as an indication that the future impacts from such wholesale termination charges on consumers would not be harmful.[94] EE argued that all TCPs have SMP in the market for NGCs and accordingly considered that the implementation of wholesale remedies was required. EE disagreed with our analysis for the following reasons:

- According to the European Commission's comments in response to a 2005 market review notification from the French regulator: "call termination to non-geographic numbers is not per se excluded from the market definition and should, in principle, be subject to market analysis under Article 16 of the Framework Directive". EE considered that this contradicted our reasons for considering that wholesale remedies are inappropriate (as set in paragraphs 9.36 to 9.40 of the April 2012 consultation).

- According to the CAT 08X Judgment at [400]: "under the telecommunications system as it presently operates in the UK, an originating CP cannot make any choice as to which communications provider terminates any particular call (including calls to 080, 0845, and 0870 numbers)... therefore, the terminating CP has an effective monopoly...".

- There were several externalities at play in the UK which have broken the links between the different interests of OCPs, TCPs and SPs in relation to the retail charges for calls to non-geographic numbers and the charges for wholesale call termination to these numbers.

- Accordingly, whilst the market in the UK for hosting non-geographic numbers may have been competitive, EE did not believe that this acted as a constraint on the significant market power of TCPs when it came to negotiating the price to be charged to OCPs, such as EE for the wholesale termination of calls to the non geographic number ranges hosted on that TCP's network. EE also did not believe that it was a bar to a finding of SMP on the part of TCPs in this market that they, as well as OCPs, differed in their size of operations. EE commented that the same is equally true in the case of TCPs for geographic and mobile calls. According to EE, this has influenced our views regarding the appropriate SMP remedies to be imposed on smaller TCPs for fixed geographic and mobile calls, but it has not precluded the initial SMP finding.[95]

A9.11 O2 argued that BT enjoyed a position of market power as a terminator of NGCs. O2 also commented that every TCP, regardless of size, enjoyed a position of strength in the market for the termination of NGCs on their respective markets. It accepted that there were some circumstances in which OCPs wielded sufficient countervailing buyer power (such as 118 numbers) but argued that this was very much the exception. O2 argued that in general customers expected to be able to dial any non-geographic number, and as a result that the OCP must provide access to these numbers and must accept the termination charges set by TCPs. O2 also believed that the introduction by other TCPs of their ladder pricing schemes was evidence of narrow termination markets and market power exerted by the relevant

[94] EE, April 2012 consultation response, pp.16-17.
[95] EE, April 2012 consultation Response, pp.16-18.

TCPs.[96] It said in its experience smaller TCPs did not negotiate with OCPs at all, they simply notified BT (acting as a transit provider) of price increases. BT accepted those price increases uncritically, and then imposed them on OCPs. In this way, it said that smaller TCPs had been able to give effect to significant termination charge increases in the same way that BT had.

A9.12 Three argued that despite the retail focus of Ofcom's consultation, it must take full account of the current issues at the wholesale level when determining the appropriate measures for the market. It argued that Ofcom remained subject to its duty to promote competition which could be impeded by imbalances in negotiating strength at the wholesale level of the market.[97]

Mobile operators have SMP in NGC origination

A9.13 BT considered that the unbundled tariff proposal, the prohibition of bespoke termination arrangements and caps on SCs would ensure that consumers were protected without the need for specific wholesale remedies. In BT's view, this meant that the NTS Call Origination Condition could be removed to allow them to compete on a level playing field.[98]

A9.14 However, as in its response to the December 2010 consultation, BT continued to challenge our assessment of the wholesale concerns. It provided a new report by Dotecon on this issue.[99] That report challenged our use of the "modified Greenfield" approach, arguing that it was ‘presumptive and limited’ as it failed to consider the full range of hypothetical possibilities open to market participants to mitigate market failure even without regulatory intervention. The report also disagreed that under the “modified Greenfield" the result of negotiations between OCPs and TCPs over termination rates would depend on the strength of the particular OCP and TCP involved. It disagreed that BT would be in a strong position due to its market share and its vertical integration.

A9.15 Dotecon argued that the bargaining power in negotiations lies with OCPs. It argued that each OCP controls access to their customers and that SPs want universal access (i.e. to have access to all OCPs, not a share of the market). As a result, Dotecon argued that the size of the OCP was not relevant. It argued that there was nothing to prevent OCPs differentiating the retail prices they set and this already occurred through zero-rating of some 080 calls.

A9.16 On the other hand, Dotecon argued that TCPs act as nothing more than “agents” of SPs (given that there is no dispute that competition amongst TCPs for SPs is effective) and so are equally at risk of individual OCPs asserting bottleneck control over their customers, largely regardless of the size of the OCP. According to Dotecon, every individual TCP faces the potential that any individual OCP could assert bottleneck control over its customers by raising retail price and so capture some or all of consumer surplus associated with the service being provided by the SP. The fact that OCPs might only differentiate retail prices to a limited degree at present is not relevant to the analysis of bargaining power in this counterfactual, as Dotecon argued that it is necessary to consider the full range of possibilities that can occur.

[96] O2, April 2012 consultation response, pp.2 & 10-11.
[97] H3G, April 2012 consultation response, pp.16 & 104.
[98] BT, April 2012 consultation response, Annex 6, pp.49-50 and supplementary Dotecon Report.
[99] See: http://stakeholders.ofcom.org.uk/binaries/consultations/simplifying-non-geographic-no/responses/BT_supplementary_report.pdf

A9.17 Dotecon argued that the size of the TCP is irrelevant in assessing market power. In fact, it argued that large TCPs may actually have less bargaining power against OCPs than smaller TCPs because, the larger the TCP, the more worthwhile it would be for an OCP to differentiate retail prices to threaten that specific TCP.

A9.18 If a TCP increased its price, Dotecon considered that the option is always available for any OCP to set a differentiated, higher retail price for that TCP or even not to carry NGCs to that TCP (assuming the OCP is not subject to end-to-end connectivity obligations). If this happened, Dotecon commented that SPs would have a strong incentive to switch to a different TCP. According to Dotecon, we have seen this effect at work in the high prices that OCPs have historically set for NGCs.

A9.19 Dotecon argued that BT's ladder pricing partially corrected the vertical externality market failure (where the interests of OCPs and TCPs are not well aligned) by facing OCPs with the consequences of raising retail prices for SPs. It said TCPs competing for SPs business had strong incentives to innovate in their wholesale prices to better achieve what SPs need and to induce this in the retail pricing of OCPs. It argued that Ofcom's ‘Greenfield scenario’ needed to consider the potential for more sophisticated vertical relationships between TCPs and OCPs to correct market failures. It noted that there are very many industries with vertical supply chains in which there are potential incentive problems between upstream and downstream firms, but where solutions have evolved through more sophisticated wholesale pricing arrangements that have obviated the need for external intervention.

A9.20 On vertical integration, Dotecon considered that in any real case where an integrated TCP controls only some originating traffic, it is unlikely that vertical integration will confer any significant advantage over other TCPs. Dotecon argued that the TCP would need to be integrated to the extent of controlling the large majority of the originating traffic for vertical integration to have a material effect. BT noted separately in its response that, viewed in the light set out by Dotecon, vertical integration was largely an irrelevancy and provided no intrinsic benefit to BT, even if other players were unable to react with counterveiling strategies themselves to address a market failure arising from market power.[100]

A9.21 BT also said that a further difficulty with Ofcom’s analytical framework was that it was effectively impossible for it, or any CP, to disprove. It said our argument that BT had not evidenced the reputation effects which it had referred to may be technically correct but it amounted to an insurmountable barrier for it to prove that its policies depended on working with a very large number of parties in a fair and reasonable manner across the board.

A9.22 Finally, with respect to the position of mobile and fixed access, it noted that at the point of call a mobile user may not have access to a fixed line, because they were outside of the home.[101]

Ofcom’s response

A9.23 Most respondents did not appear to disagree with our high level position, i.e. that we are not confident that the termination rates that would arise commercially (absent regulation or involvement by Ofcom) are likely to lead to desirable outcomes for consumers. Instead, stakeholders challenged some of the detail of our

[100] BT, April 2012 consultation response, p.49.
[101] BT, April 2012 consultation response, p.50.

analysis. BT, however, through the Dotecon report, argued that the analytical approach failed to consider the range of hypothetical possibilities open to participants to mitigate market failure without regulatory intervention.

A9.24 The main disagreement between the mobile operators and BT was about the balance of negotiating power at the wholesale level. The mobile operators generally argued that TCPs were monopoly suppliers of termination and thus in a strong position. In contrast, BT generally argued that WOCPs were essential trading partners and in effect a monopoly supplier of origination to the TCP (although Dotecon used the word “bottleneck”).

A9.25 Considered in isolation, we do not necessarily disagree with some of the arguments put forward by stakeholders about the potential constraints on negotiating power on each side, and the effects of these constraints. As we noted in the April 2012 consultation (with regard to stakeholder comments in response to the December 2010 consultation) there is merit in many of the points stakeholders make, and we have already identified them and taken them into account (for example, we noted in the April 2012 consultation that both WOCPs accounting for a high share of wholesale call origination and TCPs accounting for a high share of termination would likely be in a strong position – see paragraph A9.5 above). However, our assessment takes into account the positions of both sides because we consider it is important to take a balanced view.

A9.26 We consider that, by claiming that every operator on the other side is a monopolist, both WOCPs (the mobile operators in this case) and TCPs have taken a one-sided view. Unlike our assessment in the December 2010 and April 2012 consultation they have not taken proper account of the constraints, or lack of constraints, on both sides. Their responses do not properly engage with all of our arguments, in particular the different positions of each side as set out in paragraph A9.5 above. For example the Dotecon report provided by BT does not recognise that there are some constraints on OCPs such as the existence of substitution of calls between fixed and mobile OCPs, or that from the perspective of the OCP, the TCP is the gatekeeper of the SP. Similarly, Three, O2 and EE in their responses do not recognise that there are some constraints on the TCP in terms of the ability of the SP to switch between TCPs (which is highlighted in the Dotecon report as a constraining factor) and, from the perspective of the TCP, the OCP can be the gatekeeper to the caller.

A9.27 We now respond to individual comments from stakeholders in turn, looking first at the mobile operators’ comments and then at BT’s.

A9.28 The mobile operators’ had three main points of disagreement with our analysis of wholesale concerns:

- TCPs have SMP in the market for NGCs and implementation of wholesale remedies is therefore required;
- customers expect to be able to dial any non-geographic number and therefore OCPs must accept any charge set by TCPs; and
- wholesale concerns and imbalances in bargaining power should be taken into account in our design of remedies.

A9.29 EE made a number of comments in relation to its argument that TCPs have SMP and that wholesale remedies are therefore required. At a high level we note (as we did in the April 2012 consultation in response to a similar argument from EE) that EE's response only refers to SMP in termination markets, but we think it equally important to consider whether some or all WOCPs are in a strong position.[102] We continue to believe the framework we adopted to assess the balance of negotiating power between WOCPs and TCPs – to see whether either party is in a strong position – is well suited to this task, and note that EE has not provided any comments or evidence to suggest otherwise. We have responded to EE's comments about wholesale regulation as an alternative approach to the unbundled tariff in Annex 19, and to a free-to-caller approach in Annex 29. We also respond to EE's comments in relation to the European Commission's position in Annex 13. We now consider EE's more detailed points on wholesale concerns in turn:

- In relation to EE's argument that the fact that the market for hosting non-geographic numbers may be competitive and that TCPs vary in size does not preclude a finding of SMP, we reiterate another point made in the April 2012 consultation - namely that we have not explicitly defined markets or assessed market power in our review.[103] As a result, we are not making any finding that either WOCPs or TCPs have market power, and nor are we concluding that no market power exists. We therefore do not consider these comments invalidate our analysis.

- A similar line of reasoning applies to the CAT quotation cited by EE regarding the "effective monopoly" purportedly held by TCPs for calls to 080, 0845 and 0870 numbers. In addition to the fact we are not conducting a market review, we note that we considered the potential source of market power that caused the CAT to reach its view, namely the lack of choice as to which TCP terminates a particular call, in our assessment of relative bargaining positions. Whilst we agree that OCPs have no choice over which TCP terminates a particular call once it has been made, we also consider that the possibility for an OCP to refuse to originate calls to a certain TCP could give an OCP countervailing negotiating power in some circumstances. The statement by the CAT was made in reference to the appropriateness of the principle that operators should be allowed to recover their efficient costs in the context of that particular dispute. For these reasons we consider it does not contradict our finding as it is possible for one party to hold an effective monopoly and the other to hold sufficient countervailing buyer power to prevent this monopoly position from being exercised in some circumstances.

- Finally, we agree with EE that there are several externalities which have broken the links between the different interests of OCPs, TCPs and SPs in relation to retail and wholesale charges for non-geographic numbers. We discussed these externalities in detail in Section 4 and Annex 8 of the April 2012 consultation. We also considered the misalignment of incentives between OCPs and TCPs in our assessment of wholesale concerns, where we noted that WOCPs always prefer lower termination rates whereas TCPs generally prefer higher termination rates.[104] We considered whether these externalities, and the other retail concerns outlined in Section 4, would be adequately addressed through a market review in Annex 17 of the April 2012 consultation and concluded they would not. We do not consider EE's comment regarding the existence of externalities undermines this analysis.

[102] Paragraph A10.40 of the April 2012 consultation
[103] Paragraph A10.41 of the April 2012 consultation
[104] Paragraph A10.125 of the April 2012 consultation.

A9.30 In response to O2's comment that customers expect to be able to dial any non-geographic number and that OCPs must therefore provide access to these numbers and accept any charge set by TCPs, we note it has not provided any evidence to support this statement except to observe that other TCPs have introduced ladder pricing schemes. We recognise that OCPs generally have a commercial incentive to interconnect and we said in the April 2012 consultation that it was unattractive for WOCPs not to originate calls to TCPs because customers might react to the inability to call certain non-geographic numbers by switching to other OCPs and that the proportionate effect of any switching was relatively large for an WOCP (because it could lose all of the calls made by a particular consumer, not just the NGCs). However, we also said the evidence of the unattractiveness of that fallback position for OCPs was not clear cut, because it depended on a number of complicated factors which may vary between WOCPs and TCPs. For example, whilst the evidence indicated that switching between ROCPs was likely to be relatively easy (and therefore consumers could potentially be more likely to react to not being able to being able to access certain non-geographic numbers by switching OCP[105]), we also noted consumers had the ability to switch between using their mobile and landline phones to make calls, which could reduce the disruptiveness of not being able to access a particular non-geographic number from one of those lines (and therefore was less likely to lead to consumer switching away from their OCP, and the OCP losing all other calls made by that consumer).[106] We do not consider the introduction of ladder pricing by some TCPs affects this conclusion as it does not provide any additional evidence on how consumers would react if an OCP refused to originate calls to numbers hosted by one or more TCPs.

A9.31 With respect to Three's comment that we should take into account wholesale concerns, and in particular imbalances in negotiating power, when determining appropriate measures, we agree and consider that we have done so. We identified the potential issues at the wholesale level in our assessment of wholesale concerns in the April 2012 consultation, including potential imbalances in negotiating power, and had regard to these concerns when we evaluated potential options for remedies. In particular, we considered whether a wholesale market review would adequately address the concerns we found at both the retail and wholesale level, and our view was that it would not.[107] Whilst certain stakeholders disagree with this view, their responses to the April 2012 consultation contained no new arguments on this issue (see also Annex 19 where we set out these stakeholder comments and our response). Our conclusion remains as we proposed in April 2012. We also note that one of the reasons we have concluded that the unbundled tariff is the most appropriate approach (as opposed to the maximum prices option) is that it offers a clear benefit in addressing the wholesale concerns by enabling the OCP and TCP to determine individually the charge for, respectively origination services (the AC) and those for termination and access to the services (the SC). The maximum prices option, however, fails to address this concern (again see Annex 19 for further discussion). For making 080 free-to-caller, we are proposing the imposition of an access condition which we consider will help address some of the concerns about wholesale negotiations, see Section 14 for further details.

[105] Particularly if the calls not being connected were for a larger TCP, because it would result in a greater proportion of non-geographic numbers being unavailable to that caller.
[106] Paragraph A10.51 of the April 2012 consultation. Also see paragraphs A3.117 to 3.135 of the December 2010 consultation where we set out our position, and the complicating factors, in more detail.
[107] See Annex 17 of the April 2012 consultation.

A9.32 Turning now to BT's comments, BT argued that the NTS Call Origination Obligation should be removed as it is no longer necessary to protect consumers. This condition was imposed as a result of the last Wholesale Narrowband Market Review and will remain in force until October 2013. We have recently issued a consultation on the fixed narrowband market review, which proposed that the NTS Call Origination Condition would remain in place until such time as the unbundled tariff remedy is implemented.[108]

A9.33 The Dotecon report submitted by BT contained the following specific challenges:

- OCP size is not relevant to bargaining power because SPs want to access all customers. Further, any OCP can assert bottleneck control over its customers by charging different prices for calls to numbers hosted on different TCPs' networks- as evidenced by high OCP prices;
- large TCPs may have less bargaining power than smaller TCPs;
- ladder pricing and other vertical agreements could be used to address our wholesale concerns; and
- a TCP would need to control the majority of origination traffic for vertical integration to affect bargaining power.

A9.34 We now consider and respond to each point in turn.

A9.35 We agree that SPs want to access all customers but do not agree this means the size of the OCP is irrelevant to their relative bargaining power. We note, as we did in the April 2012 consultation, that the larger the WOCP, the more detrimental the consequences for the TCP of a refusal to originate calls.[109] This reflects the fact that a failure to reach an agreement with a WOCP would have negative consequences for the TCP, but that the size of these consequences would be related to the number of potential callers at stake.

A9.36 With respect to the comment that any OCP can assert bottleneck control over its customers, we note firstly that we stated in the April 2012 consultation that it is not sufficient simply to observe that the fallback position is unattractive for the TCP, for example because the OCP, is a 'bottleneck'. It is also necessary to consider whether the fallback position is unattractive for the OCP. Indeed the TCP may also be a 'bottleneck' from the OCP's perspective (see also the summary of our view on the 'fallback position' in paragraph A9.4 above).[110] We continue to consider that it is appropriate to consider the situation from the perspective of both parties.

A9.37 We also note that we considered the impact of the potential for OCPs to charge different retail prices for different TCPs on relative bargaining strength in the April 2012 consultation. In particular, we noted that if the volume of calls received by SPs were to fall in response to higher prices then those SPs may respond by switching to another TCP, which would weaken the TCP's position. However, we found the evidence on how callers would respond to higher retail call prices was mixed.[111] Dotecon has not provided us with any additional evidence that would

[108] See paragraphs 5.280-5.292: http://stakeholders.ofcom.org.uk/consultations/nmr-13/
[109] See paragraph A10.52 of the April 2012 consultation.
[110] Paragraph A10.67 of the April 2012 consultation.
[111] See paragraphs A10.53 – A10.54 of the April 2012 consultation. We discussed this issue in more detail in the December 2010 consultation, see paragraphs A3.161 to A3.164. In particular we

cause us to change our view. We also note that, particularly in the revenue sharing number ranges, SPs may tolerate some reduction in call volumes in return for a higher revenue share achieved through a higher termination rate.

A9.38 On a related note, we also disagree with Dotecon's comment that, because of this ability of OCPs to differentiate their retail pricing, large TCPs may have less bargaining power against OCPs than smaller TCPs. We recognise that OCPs may have greater incentives to charge a different retail price for calls terminated by a large TCP given the larger call volumes, and hence profits, at stake. On the other hand we note that OCPs may be more averse to raising prices for calls to numbers hosted on larger TCPs' networks on the grounds that this would involve call price increases for a larger proportion of NGCs, which is more likely to influence the caller's choice of OCP for making the call (e.g. their fixed or mobile line) and may even be a factor in the customer's choice of OCP when signing up to a new package (although the extent of this effect is likely to be limited by the current lack of consumer price awareness).[112] We have not seen any evidence to suggest either effect would dominate, nor have we seen clear evidence suggesting that such differential prices, if implemented, would weaken the TCPs' position. Our reasoning for considering that a TCP's share of supply is a relevant factor in its bargaining position was that the greater the proportion of non-geographic numbers unavailable to a caller, the more likely there would be a negative effect on subscribers originating calls via their OCP. Dotecon's argument does not challenge this reasoning, and we therefore continue to consider that larger TCPs will tend to have a stronger bargaining position.

A9.39 In response to Dotecon's comment that high OCP prices reflect their bargaining power, we consider that high OCP prices are likely to reflect factors other than an attempt to discipline TCPs and in particular are likely to reflect low consumer price awareness. Many of these high prices have been applied to all TCPs equally rather than differentially to those attempting to charge higher termination rates, and so it is hard to see how these high prices would cause SPs to switch TCPs. In any event, we note as above that it is not clear how consumers would react to higher prices for calls to some numbers, and therefore whether SPs would indeed have incentives to switch TCP.

A9.40 In response to Dotecon's comment regarding ladder pricing, we concluded in Annex 17 of the April 2012 consultation that there was a great deal of uncertainty around the impact of variable termination rates and the incentives they created. As part of that assessment (which built on the assessment in the December 2010 consultation) we noted that different TCPs (and SPs) might have different preferences and incentives, which created ambiguity about how TCPs would behave. In particular there was a risk that TCPs might not face a competitive incentive to behave in a way that benefited SPs.[113] Furthermore, it is not clear that such arrangements, given the current failures in the NGC market, would result in better outcomes for consumers. They could be a means of redistributing the gains from the exploitation of consumers' low price awareness from OCPs to TCPs. In

highlighted factors such as the nature of the SP (e.g. whether callers were 'locked-in' to making that call), caller's poor awareness of prices (which might mean they would make the call anyway, despite the higher price, because they were unaware of that price), and the impact of the tariff package effect (which might mean that the effect of an individual rise in call termination for a particular number would be spread across all NGCs and may not as a result be noticeable to a caller).

112 Nevertheless, given the market failures we have identified (see Section 4) in particular in relation to poor consumer price awareness, we recognise that these factors are likely to be relevant for only a minority of consumers.

113 See paragraphs A17.10 to A17.14 and A17.41 to A17.45 of the April 2012 consultation.

the previous disputes concerning BT's ladder pricing in the 080, 0845 and 0870 number ranges, we found there was a risk that consumers would suffer material harm as a result of the charges even after taking into account the potential for the charges to address some of our concerns about the NGC market.[114]

A9.41 Finally, in response to Dotecon's comment that a TCP would need to control the large majority of originating traffic for vertical integration to have a material effect, we recognise that the TCP's share of originating traffic will be related to the strength of the effect. One of the effects we identified is that, when an OCP is negotiating with a vertically integrated firm's TCP business, some callers who would switch away from their current OCP in response to that OCP no longer originating calls to the vertically integrated firm's TCP business may switch to the vertically integrated firm's OCP business, increasing its retail revenues. We recognise that it is more likely a greater number of customers would switch to a firm with a larger market share, and therefore agree that the strength of this vertical integration effect will be related to the firm's share of origination traffic. However we disagree the vertically integrated firm would need to have the large majority of origination traffic for there to be any material effect. Any switching at all to the vertically integrated firm will change the TCP's incentives relative to those faced by a non-integrated firm who would not experience this offsetting effect. We also consider that the vertically integrated firm's OCP business need only hold a modest share of origination traffic for a material amount of switching to be feasible. As a result, we continue to believe that vertically integrated firms are likely to be in a position of relatively greater bargaining power.

A9.42 BT also made a number of additional comments in its response which we respond to below:

- In terms of BT not being able to provide evidence to support its claims about the reputational effects of not reaching an agreement, we recognise that it can be difficult to provide evidence of effects which are theoretical but we noted in the April 2012 consultation that BT had not elaborated on this point, for example by explaining with which customers its reputation would be damaged and how they might react. We therefore referred to BT's absence of reasoning as well as evidence and note that BT has not provided any further explanation of this point in its response; and

- In terms of mobile and fixed access, we recognise that consumers who are outside of the home may not have access to a fixed line at a particular point in time, nonetheless, they can make a choice to defer that call to a time when they are at home. In any case, as we noted in the April 2012 consultation, even if a consumer only had access to a mobile, the impact of that on the strength of a WOCP's bargaining position is not clear cut.[115]

A9.43 Overall, we consider that the OCPs and BT have each presented a number of arguments why their counterparty holds a position of relative bargaining strength but have not provided compelling reasons to overturn our view that they also might hold a position of relative strength in some circumstances. We therefore do not see

[114] Similarly, in our recent dispute determination for the more recent ladder charging by BT on the 080, 0844/3, 0871/2/3 and 09 ranges we said it was uncertain whether those charges would result in a net benefit or net detriment to consumers, http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_01055/

[115] In particular see the final bullet of paragraph A10.68 of the April 2012 consultation.

any reason to modify the conclusions we reached in the April 2012 consultation, summarised at A9.2 to A9.8 above.

Part A – Annex 10

Assessment of costs

Introduction

A10.1 This Annex sets out a summary of issues raised in responses to our April 2012 consultation in respect of our estimates of the costs of implementing the unbundled tariff and making the 080 and 116 ranges free-to-caller. It also sets out our comments and our updated analysis in response to the issues raised. Our assessment of costs is used as an input into our impact assessment of the unbundled tariff and making 080/116 free-to-caller in Annex 11 and in sections 8 and 13, respectively.

A10.2 We consider the following cost areas in turn for both the unbundled tariff and making the 080 range free-to-caller:

- billing costs;
- migration costs;
- misdialling costs;
- communications costs; and
- other costs.

A10.3 Finally, we explain our approach to estimating the costs of making the 116 range free-to-caller at the end of this annex.

Billing costs

Unbundled tariff

<u>Summary of our position in the April 2012 consultation</u>

A10.4 In the April 2012 consultation we explained that the potential implementation costs of the unbundled tariff depended mainly on two issues:

- the number of price points that could be supported at the retail level by OCPs' billing systems; and
- the extent of NGC tariff information presented on consumers' bills.

A10.5 We explained that since the December 2010 consultation we had engaged further with stakeholders through industry working groups and bilateral meetings. As a result of this, we concluded that the primary drivers of implementation costs were the number of SC price points and the presentation of disaggregated charges (i.e. AC and SC) in consumers' bills. We noted that another important factor was the implementation timeline, as some OCPs with legacy billing systems faced significant technical constraints whereas the costs for OCPs with newer systems were significantly smaller. We went on to discuss these in more detail.[116]

Number of SC price points

A10.6 We said that, for existing billing systems, billing costs were only significant for supporting more than 50 SC price points whereas there were no technical restrictions around the number of pricing points for newer billing systems. We explained that many OCPs had indicated that ongoing costs would increase with a larger number of SC price points. We noted however that with an 18 month implementation period a large number of price points was less likely to be a limiting factor for OCPs as they could add these upgrades to their broader billing systems upgrade programmes.[117]

Disaggregation of ACs and SCs in customer's bills

A10.7 We proposed that we should no longer require that the AC and SC should be disaggregated in customers' bills.[118] This was in part, because OCPs had indicated that there would be significant costs in implementing billing system changes to present disaggregated bills. As a result of our proposals, we expected the costs to be lower and for this reason we had used estimates from stakeholders for lower cost options.[119]

Provisional cost estimates on a per-firm basis

A10.8 We estimated implementation costs by OCPs to fall in the range of £10k-£3m for up-front costs and £10k-£50k for annual costs on a per-firm basis. These were based on the following assumptions:

- up to 60 SC price points;
- the AC should be presented in consumers' bills, with no mandatory obligation to present disaggregated charges;
- the unbundled tariff would not be implemented before mid-2014, meaning that OCPs were less likely to face any technical constraints with legacy billing systems.

A10.9 We explained that the broad cost range was due to the differing network and billing architectures across OCPs, although we considered that most OCPs would face costs towards the lower end of the range. Due to the provisional nature of these cost estimates we said we welcomed further stakeholder engagement to refine our estimates.[120]

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[116] See paragraphs A19.1 to A19.3 of the April 2012 consultation for a description of our general approach to assessing billing systems implementation costs.
[117] See paragraphs A19.11 to A19.19 of the April 2012 consultation for a description of the costs resulting from different number of SC price points.
[118] See paragraphs 12.26 to 12.36 of the April 2012 consultation were we set out our proposal not to require OCPs to present disaggregated ACs and SCs in customer bills. Our view on this issue in this document is set out in Section 10 of Part B.
[119] See paragraphs A19.20 to A19.24 of the April 2012 consultation for a description of the costs associated with disaggregating charges in customers' bills.
[120] See paragraphs A19.25 to A19.28 of the April 2012 consultation for a description of our provisional billing systems implementation costs.

Provisional cost estimates on an industry basis

A10.10 We considered that most OCPs were likely to face costs at the lower end of our range of costs per firm but that a few (mainly the large mobile OCPs) could incur higher costs within this range.

A10.11 For the industry as a whole we also estimated a range of costs. In the case of the lower bound of the range (£60.8m one off costs and £1.8m annual costs) we assumed:

- 20 OCPs with more complex billing systems would incur costs at the top end of the range (i.e. one-off costs of £3m each plus additional annual costs of £50k each); and

- 80 OCPs would not need to make substantial changes to their billing systems (i.e. incur one-off costs of £10k each plus annual costs of £10k each).

A10.12 We noted, however, that the assumption that 20 OCPs would incur billing costs at the top end of the range was likely to be somewhat high.

A10.13 In the case of the upper bound costs (£64.8m one off costs and £5.8m annual costs) we wanted to recognise the uncertainty surrounding our assumption on the number of OCPs (i.e. the 100 OCPs assumed, which was based on the number of firms that had purchased call origination from BT in 2009).

A10.14 For this, we did not change the assumptions for the OCPs with complex billing systems but we (i) increased the number of OCPs with simpler billing systems from 80 to 240, and (ii) we increased the one off costs and annual costs for these OCPs to £20k each.

A10.15 In summary, this resulted in an estimate of one-off costs between £60.8m-£64.8m and annual costs of £1.8m-£5.8m.[121]

Stakeholder comments

A10.16 Several stakeholders said they agreed with Ofcom's cost estimates. BT said that Ofcom's range of costs seemed reasonable based on past experience. It said its costs would be towards the upper end given its involvement as both an OCP, TCP and SP and as a transit provider.[122] CWW said it was satisfied that Ofcom had obtained detailed information from individual CPs in order to draw its conclusions and estimates for the implementation of the unbundled tariff.[123] Vodafone, Three and Magrathea also said they broadly agreed with Ofcom's estimates.[124]

A10.17 [✂] said it supported Ofcom's view that the billing system cost estimates supplied by some OCPs were overstated. [✂].[125]

[121] See paragraphs 13.5 to 13.8 of the April 2012 consultation for a description of our estimates of industry's billing systems implementation costs.
[122] BT, April 2012 consultation response, pp.25-26.
[123] CWW, April 2012 consultation response, p.29.
[124] Vodafone, April 2012 consultation response, p.33, Magrathea, April 2012 consultation response, Q13.1, Three, April 2012 consultation response, p.19.
[125] [✂]

A10.18 In contrast, several stakeholders said that either the cost implications of our proposals were not yet clear and/or that they estimated that the costs were likely to be higher.

A10.19 O2 said that following an internal high level assessment of its anticipated billing costs for implementing the unbundled tariff, it believed that it would be facing costs of between [✂] (estimated costs). It said these figures reflected the costs it believed it would incur across all of its affected systems. It said those costs would be subject to some fluctuation depending on how it decided to implement Ofcom's proposals (for example, whether the AC would be included in a bundle), but it anticipated that even in the most cost efficient scenario, its billing costs for implementing the unbundled tariff would exceed Ofcom's own estimates.[126]

A10.20 [✂].

A10.21 Verizon said that [✂].[127] [✂].[128]

A10.22 Surgery Line said it was continuing to collect further information on the implications of Ofcom's proposals on its business and its CP customers. It noted it had concerns about the implications for billing its customers, and of migration costs, because the proposals were not yet clear. It said there would be a cost to have billing and rating engines developed to support the changes. However, it said that without further detail, the cost implications were difficult to quantify.[129]

A10.23 EE noted that the costs of rebuilding billing systems to meet the proposal were highly uncertain with serious and potentially costly execution risks. It considered it was unable to estimate one off or annual billing costs until the final proposals were known to enable project resourcing to be set up to identify those costs. It said the precise details could impact greatly on the software development costs. It said that direct implementation costs were likely to be high, particularly those that related to the required changes to the OCP's legacy billing systems.[130] Accordingly it argued that Ofcom should be very conservative when estimating billing costs and that therefore the £3m one off costs should represent the central (and not the upper) cost estimate in Ofcom's cost benefit assessment. EE also considered that the annual costs of £6m might not represent the upper end of costs, especially if changes were needed to fix problems with its third party providers.[131]

Ofcom's response

A10.24 Whilst a number of respondents agreed with our estimates of billing costs, several stakeholders disagreed with our assessment in the April 2012 consultation. In what follows we:

- respond to stakeholder comments relating to our estimates of billing costs in the April 2012 consultation; and

[126] O2, April 2012 consultation response, p.23.
[127] [✂]
[128] [✂]
[129] Surgery Line, April 2012 consultation response, pp.7-8.
[130] In response to Q12.11, EE noted [✂], EE, April 2012 consultation response, pp.37-38.
[131] EE, April 2012 consultation response, p.38.

- update our billing cost estimates to account for changes since our April 2012 consultation, as well as to take into account additional evidence provided by CPs since the April 2012 consultation.

Comments relating to the billing cost estimates in the April 2012 consultation

A10.25 In principle we agree with [✂] that when assessing the costs of implementation of our decisions we should be careful not to account for costs incurred by CPs inefficiently. Such an approach could have serious unintended consequences for our decision-making if, for example, we decided against the introduction of the unbundled tariff on the basis of cost estimates that did not reflect efficiently incurred billing costs. It could be argued, as suggested by [✂], that we should not take into account some CPs' billing costs if we consider that these arise because their legacy billing systems are outdated and, therefore, do not reflect efficiently incurred costs.

A10.26 Although we note [✂]'s concerns, we consider that there are significant practical difficulties associated with an assessment of the efficiency of the billing systems used by CPs. Instead, for simplicity we have decided to account for CPs' billing costs at face value in our impact assessment, even though this may overstate costs. We do not consider it is necessary for us to make a judgment on the relative efficiency of CPs' billing systems as our impact assessment shows that the benefits of the unbundled tariff are likely to outweigh the costs (even where the billing costs provided by some CPs may not reflect efficiently incurred costs).

A10.27 We disagree with Surgery Line and EE that we have not provided sufficient detail for stakeholders to form at least a broad view on the likely billing costs of our proposals. As discussed in paragraph A10.8 above, in the April 2012 consultation we set out the assumptions that we used to estimate billing costs associated with the unbundled tariff. That this has proven to be sufficient for some stakeholders to estimate costs is shown by the fact that several stakeholders have submitted their expected billing costs of the unbundled tariff.[132] We also note that Surgery Line and EE did not indicate what other information they would require from us to be able to estimate the billing costs resulting from our proposals. In fact, despite several requests to Surgery Line for further information on their potential costs, they did not provide any further information.[133]

A10.28 In addition, we asked Verizon for further information about its cost estimates. [✂].[134]

A10.29 We agree with EE's view that there is some degree of uncertainty as to the exact billing costs of the unbundled tariff. However, we do not necessarily agree that this should lead us to use the £3m figure as the central estimate in our range. Our estimates in the April 2012 consultation already provided a conservatively high estimate by attributing 20 OCPs with complex billing system costs despite the fact that some OCPs had provided lower cost estimates. We have, nevertheless, undertaken a reassessment of our approach to billing costs which is set out below, and this takes into account the fact that some individual OCPs (such as EE) are more likely to face higher implementation costs at the upper end of the range we presented in the April 2012 consultation.

[132] [✂].
[133] Emails sent on 9 September 2012, 28 September 2012 and 11 November 2012
[134] [✂].

Updated billing costs data

A10.30 The billing cost estimates that we presented in the April 2012 consultation reflected CPs' expected billing costs under the assumption that there would be 60 SC price points (i.e. the lower end of our 60 to 100 proposed range). We noted that the upper bound of the annual costs we had estimated could double to £100k if the number of SC price points was increased to 100.[135] As set out in Section 9 and in more detail in Annex 21 we have now decided that OCPs should be required to bill a minimum of 100 SC price points, i.e. the upper end of that range.

A10.31 Given the comments we received from some stakeholders which suggested that our estimates were an underestimate of the potential costs, and in order to obtain further information on the likely impact of a greater number of SC price points, we asked some CPs (in particular those who had indicated that the number of price points would have an impact on their costs) to provide updated estimates of their billing costs assuming 100 SC price points.

A10.32 In Table A10.1 below we present the billing costs from each of the CPs that provided estimates, whether prior to the April 2012 consultation or in response to our most recent information request.

Table A10.1: Billing System Costs

	Up- front Implementation Cost	Annual Operating Cost
Three	[✂]	[✂]
O2	[✂]	[✂]
Vodafone	[✂]	[✂]
EE	[✂]	
BT	[✂]	
TTG	[✂]	[✂]
CWW	[✂]	
Reseller/Small CP	[✂]	[✂]

A10.33 There is a wide range in the estimated costs we have received from CPs. However, there seems to be a clear difference between the expected (higher) billing costs of mobile CPs and the (lower) billing costs of fixed CPs. Even within these two groups there is still significant variability in the expected billing costs of implementing the unbundled tariff. We note in particular that the costs submitted by [✂] are clearly an outlier compared to the submissions of other mobile CPs.

[135] See paragraph A19.25, footnote 218, of the April 2012 consultation.

A10.34 Since the April 2012 consultation, the lowest estimated implementation cost for mobile CPs has increased from [✂]. The reason is that [✂].[136] Similarly, [✂].[137] [✂]. [✂].

A10.35 We note that the example of these CPs shows that the incremental cost of implementing the unbundled tariff is likely to be relatively small if, for example, it is run in parallel to the upgrade of these CPs' legacy billing systems.

A10.36 In the case of mobile CPs, the estimated costs range from:

- **Up-front costs:** from [✂] (the lower and upper bound of cost estimates provided by mobile CPs).

- **Annual costs:** from [✂] (the lower and upper bound of cost estimates provided by mobile CPs).

A10.37 In the case of fixed CPs, the estimated costs provided to us are significantly below those of mobile CPs, namely:

- **Up-front costs:** from [✂] (the lower and upper bound of cost estimates provided by fixed CPs).

- **Annual costs:** we only received two fixed CP's responses, both stating that the cost was likely to be [✂] (the lower and upper bound of cost estimates provided by fixed CPs).

A10.38 The large variation between fixed and mobile CPs (as well as within each of these groups) may be explained by the fact that some CPs are still operating legacy billing systems, which are likely to incur higher costs to accommodate a higher number of price points or different charging structures, than those CPs who operate more modern billing systems.

Ofcom's estimated industry costs

A10.39 The additional evidence provided by mobile CPs under formal powers clearly shows that there are significant differences between the billing costs of fixed and mobile CPs. In light of this new evidence, we believe the assumptions we made to estimate industry costs in the April 2012 consultation are no longer appropriate.

A10.40 In the April 2012 consultation we assumed 100 CPs would incur costs of implementing the unbundled tariff. In our latest billing cost estimates we have decided to assume that the number of CPs is likely to be around 212.[138]

A10.41 In terms of the number of CPs under each of the cost scenarios, we assume that there are likely to be:

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[136] [✂].
[137] [✂].
[138] The 212 CPs identified is the sum of 32 mobile CPs identified in our Mobile Call Termination Statement published in March 2011 (see paragraph 3.150), and approximately 180 fixed CPs identified in our Fixed Narrowband Market Review published in February 2013 (see paragraph 7.55). It has been assumed that CPs which provide call termination services also offer call origination services. Where a CP has been identified as providing both fixed and mobile services it has been counted twice to allow for these being supported by separate billing systems.

- **High complexity billing systems:** 4 to 10 CPs that will require complex changes to their billing systems. This is to reflect the case of some mobile CPs, which have indicated that they will need significant updates to their billing systems to meet the requirements of our decision in terms of additional pricing points. We use a relatively wide range within this category (of up to 10 CPs) to allow for the possibility that some MVNOs and/or fixed CPs may also incur these higher costs.

- **Medium complexity billing systems:** 10 to 30 CPs that will require changes to their billing systems with a medium level of complexity. This is the case of the largest fixed CPs which have indicated that their billing systems are already capable of handling a large number of pricing points and therefore would only require comparatively minor adjustments.

- **Low complexity billing systems:** 172 to 198 CPs that will require changes to their billing systems with a low level of complexity. This reflects the situation of most resellers and small CPs.

A10.42 In terms of the cost scenarios, reflecting the evidence on billing costs available to us, we define a ‘Lower cost’ and ‘Higher cost’ scenario for each of the complexity scenarios described above (i.e. High, Medium and Low complexity), as follows:

- **High complexity billing systems:** we derive each of the upfront and annual costs as follows:

  - Upfront costs: we estimate two scenarios- a ‘lower cost scenario’ and a ‘higher cost scenario’. Both scenarios are derived by taking the average of costs submitted by [✂] (all mobile CPs providing cost estimates). We assume an upfront cost of [✂] for [✂] (one of the mobile CPs) in both scenarios to reflect its most recent submission on cost estimates. The ‘lower cost scenario’ is derived by assuming that [✂] (one of the mobile CPs) faces upfront costs in line with the lower bound of its own cost estimates and the ‘higher cost scenario’ by assuming that the same CP faces costs equal to the upper bound of its own estimates.

  - Annual costs: we estimate an average of the costs submitted by [✂] and the lowest cost estimates submitted by [✂] for the ‘Lower cost scenario’ (this includes all mobile CPs providing cost estimates). We replace [✂] (one of the mobile CPs) lowest cost estimates by their respective highest cost estimate to estimate the average cost in the ‘Higher cost scenario’.

- **Medium complexity billing systems:** we derive each of the upfront and annual costs as follows:

  - Upfront costs: we estimate an average of the costs submitted by [✂] (several fixed CPs) and the lowest cost estimate submitted by [✂] in the case of the ‘Lower cost scenario’ (this includes all medium complexity fixed CPs providing cost estimates). We replace [✂] (one of the fixed CPs) lowest cost estimate by its highest cost estimate to estimate the average cost in the ‘Higher cost scenario’.

  - Annual costs: we use [✂] (the only medium complexity fixed CP providing cost estimates) estimate of £0 for the lower bound of the cost range, and we assume an upper bound of £20,000.

- **Low complexity billing systems:** we use the cost estimates based on discussions with a small number of CPs and billing providers. We derive each of the upfront and annual costs as follows:
  - o Upfront costs: we use [✂] (one CP's) £5,000 upfront cost estimate (the lowest of all fixed CPs' cost estimates) in the 'Lower cost scenario' and [✂] (one CP's) £27,000 (the highest of the remaining fixed CPs' cost estimates) in the 'Higher cost scenario'.
  - o Annual costs: we use [✂] (one CP's) estimate of £0 in the 'Lower cost scenario', and we assumed £10,000 ongoing costs in the 'Higher cost scenario'.

A10.43 We present the upper and lower billing cost estimates per CP in Table A10.2 below.

Table A10.2: Assumed per CP upper and lower billing costs

	Number of CPs		Per CP up-front cost range		Per CP Annual cost range	
Scenario	**Higher cost**	**Lower cost**	**Higher cost**	**Lower cost**	**Higher cost**	**Lower cost**
High complexity billing systems	10	4	[✂]	[✂]	[✂]	[✂]
Medium complexity billing systems	30	10	[✂]	[✂]	[✂]	[✂]
Low complexity billing systems	172	198	[✂]	[✂]	[✂]	[✂]

A10.44 Using the assumptions in the previous table, we estimate the industry billing costs as presented in Table A10.3 below:

Table A10.3: Assumed high and low total industry billing costs (£m)

	Total up-front cost range		Total annual cost range	
	Higher cost	Lower cost	Higher cost	Lower cost
High complexity billing systems	[✂]	[✂]	[✂]	[✂]
Medium complexity billing systems	[✂]	[✂]	[✂]	[✂]
Low complexity billing systems	[✂]	[✂]	[✂]	[✂]
Total costs	£35.1m	£11.2m	£7.4m	£1.4m

A10.45 In summary, we estimate that the billing costs to industry will be:

- **Up-front:** between £11.2m to £35.1m; and
- **Ongoing:** between £1.4m to £7.4m per annum.

A10.46 We acknowledge that our range of cost estimates is relatively wide. This is however a reflection of the different state of each OCPs' billing systems, in particular, whether or not they have legacy billing systems and their current approach to pricing (e.g. the number of tariff bands).[139] We have therefore sought to reflect the evidence provided by CPs as closely as possible.

A10.47 In light of the changes to our estimates of billing costs for the unbundled tariff, we believe it is appropriate to give the opportunity to stakeholders to comment on these:

Q10.1: Do you agree with our estimates of the billing costs for implementing the unbundled tariff? If not, please explain why and provide evidence to support your response, particularly of the level of costs you are likely to incur as a result of our approach

080 free-to-caller

Summary of our position in the April 2012 consultation

A10.48 In the April 2012 consultation we considered that making the 080 range free-to-caller would not result in any material change to CPs' billing or system costs.[140] We therefore did not provide any estimates of these costs.

[139] The top end of the range could also reflect the practical difficulties in identifying and adjusting for inefficiently incurred billing costs.
[140] See paragraph 16.259 of the April 2012 consultation.

Stakeholder comments

A10.49 EE noted that we had said in paragraph 17.98 of the April 2012 consultation that mobile OCPs would have to make some billing system amendments to ensure that calls to 080 did not appear on customers' bills, and it suggested that we should attempt to quantify these costs.[141]

A10.50 CWW considered that the solution proposed for the 080 range should be simple enough for network operators to justify the costs involved to develop the capability to operate this new system and notably to cover the billing and billing verification systems required if origination charges are to vary between different originators.[142]

Ofcom's response

A10.51 Since the April 2012 consultation, we have decided to explore in more detail whether there could be additional billing costs faced by OCPs and TCPs as a result of making the 080 range free-to-caller. We consider that the following two factors could give rise to additional billing costs:

- the need to upgrade billing systems to allow TCPs to automatically differentiate between fixed and mobile origination charges using the customer line identification ('CLI'); and

- the existence of more than two origination charges (i.e. a single fixed origination charge and a single mobile origination charge).

A10.52 In addition, the introduction of zero rating for consumer calls to 080 numbers will reduce the number of retail prices charged by mobile CPs to their residential customers. Going forward, there will be a single retail price point for residential calls to 080 numbers.

A10.53 We discuss each of these issues in turn below.

Costs associated with CLI presentation

A10.54 We discussed in the April 2012 consultation that the mobile CLI could be used as an indicator of when the (higher) mobile origination charge should be paid. Although some stakeholders raised concerns that the mobile CLI was not present for all calls, we noted that it would be in mobile CPs' interests to present this to receive the origination charge.[143]

A10.55 We therefore considered whether the usage of the CLI to differentiate traffic between mobile and fixed CPs could result in additional costs to TCPs if, for example, they need to upgrade their billing systems to incorporate this functionality. We consider that it is unlikely that there will be any material costs associated with this. To understand why, it is helpful to distinguish between two types of TCPs:

- TCPs with direct interconnects to OCPs; and

- TCPs that use other CPs (for example, BT) as transit providers.

[141] EE, April 2012 consultation response, p. 44.
[142] CWW, April 2012 consultation response, p. 30.
[143] See paragraphs 17.80 to 17.83 of the April 2012 consultation.

A10.56 In the first case, where a TCP interconnects directly, it is able to recognise the source of that traffic in most cases without a material cost. In the second case, where the TCP receives the 080 traffic from a transit provider, the transit provider is generally able to offer this differentiated traffic information to the terminating TCP. For example, in its December 2010 consultation response, BT indicated that it offered this functionality where it operated as a transit provider.[144] Therefore, in practice we would not expect any material additional billing costs associated with billing using the mobile CLI.

A10.57 We are nonetheless aware that there is a potential risk that OCPs, particularly fixed OCPs, may seek to misrepresent the origin of their call by transiting through a mobile CP to obtain the higher mobile origination payment. However, as we discuss in Annex 30, we consider that the TCP/transit operator will have a commercial interest in ensuring that the OCP provides sufficient information to verify that the call originated on a mobile network.

Existence of different origination charges

A10.58 In the April 2012 consultation we explained that making the 080 range genuinely free-to-caller would require changes to the origination charges that TCPs pay to mobile OCPs, as mobile OCPs would no longer be able to recover the costs of originating calls to these numbers through retail prices. Since the publication of the April 2012 consultation we have published our consultation on the Narrowband Market Review[145] in which we are consulting on the removal of the NTS Call Origination Condition.[146] This means that the charge retained by BT for originating calls to non-geographic numbers could also be subject to change if we decided to remove this condition, as BT's origination charges for 080 numbers would no longer be charge controlled.

A10.59 We note that although there is currently no requirement for other OCPs to receive the same origination charges as those set by BT's call origination condition, before the introduction of tiered termination charges it was the de facto industry rate.[147] The vast majority of TCPs paid a single origination charge of 0.5ppm, independently of whether the call to a 080 number originated from a mobile or a fixed OCP. Arguably (and abstracting from TCPs' use of tiered termination charges), the changes introduced by making the 080 range free-to-caller could result in a departure from the industry practice of having a single origination charge. Any increase in the number of origination charges paid by TCPs could lead to additional billing costs for both TCPs and OCPs.

A10.60 For this reason, we have investigated in more detail in Annex 30 the likelihood that multiple origination charges, beyond the differentiation between fixed and mobile

[144] See paragraph A10.104 of the April 2012 consultation.
[145] http://stakeholders.ofcom.org.uk/consultations/nmr-13/
[146] The NTS Call Origination Condition requires BT to originate and to retail NTS calls on behalf of the terminating operator. Under the condition, BT is obliged to pay to the terminating operator the net retail revenue it receives from NTS calls originating on or transiting its network, less certain deductions. These payments are known as POLOs. For further detail, see http://stakeholders.ofcom.org.uk/binaries/consultations/nts-retail-uplift/statement/NTSRU_statement.pdf
[147] As we noted in the April 2012 consultation, current prices for 080 numbers are in a state of flux as a result of the 08x CAT Judgment and, therefore, we considered it more appropriate to rely on the prices existing prior to the Judgment for our assessment. We still believe this is the case, as further discussed in Section 3 (see paragraphs 3.44 to 3.45).

origination, may materialise in practice.[148] Our analysis assumes that we impose the wholesale access condition on TCPs and publish associated guidance on how we would resolve any future dispute about whether fixed or mobile origination charges were fair and reasonable. In Annex 30 we conclude that it is no longer appropriate to necessarily assume that there will be a single origination charge for each of fixed and mobile calls.[149] However, we consider that there are a number of factors that are likely to minimise the range of origination charges in the market. For this reason, we conclude in Annex 30 that this is unlikely to represent a significant increase in complexity for most CPs and is unlikely to result in significant additional billing costs.

A10.61 We have nonetheless considered it appropriate in our assessment of billing costs to allow for the possibility that origination charges may not converge to a single charge for each of fixed and mobile. This could reflect, for example, the situation in which there would not be convergence in origination charges (or that convergence may occur over a period of time). We believe that the existence of multiple origination payments would not necessitate any capital expenditure to upgrade TCPs' existing platforms, as these are already likely to be able to handle multiple origination payments. In fact, a regime with multiple origination payments would be technically similar to the existing situation with tiered termination rates (i.e. different origination payments depending on the identity of the OCP). We similarly consider that the existence of multiple origination payments is unlikely to result in significant ongoing management costs, as TCPs already have the resources to determine the identity of the OCP and pay according to this identity.

A10.62 In light of the above, we consider that the costs associated with multiple origination charges, if they arise, are unlikely to be material. These costs are also very difficult to quantify, mainly due to the uncertainties around the exact number of different origination payments that may arise. For this reason we have not attempted to provide an estimate for these costs.

Reduction in the number of itemised billing price points

A10.63 In the April 2012 consultation we explained that mobile CPs typically charged three different retail prices for 080 calls:

- free for some services (e.g. the DWP or some charities);
- a price for pre-pay customers; and
- a price for contract customers.[150]

A10.64 This means that making 080 numbers free-to-caller is likely to reduce the number of retail prices charged by mobile CPs to their residential customers (from three to one). For the reasons discussed in paragraph A10.60 above, we do not refer to business customers in our analysis. We disagree with EE's comment that making the 080 range free-to-caller will result in additional billing costs. Firstly, mobile CPs have the capability to discriminate between zero rated and chargeable calls (for example, in the case of DWP's zero rated 080 numbers) and are already obliged by

[148] See paragraphs A30.50 to A30.54 in Annex 30.
[149] We also note that we have assumed that both calls from business and residential customers are likely to be free-to-caller from any device (both fixed and mobile), for the reasons discussed in section 12.
[150] See paragraphs 14.37 to 14.46 of the April 2012 consultation.

General Condition 12 to ensure that zero-rated calls are not itemised on customer bills. Secondly, given the long implementation period that we have adopted, we believe that any changes to retail billing to reflect changes in the prices of 080 calls could be done in parallel with changes to other retail prices.

A10.65 In contrast, we consider that making all 080 numbers free-to-caller could result in some savings for mobile CPs in terms of billing costs, given that the number of retail prices they set for residential calls to 080 numbers will reduce from typically three to just one. Although we have not attempted to quantify the likely savings involved, mobile OCPs have argued in their comments on the unbundled tariff that management of any retail price point has a material cost (as shown by their comments in paragraphs A10.16 to A10.23).

Migration costs

Estimates of migration costs per firm

Summary of our position in the April 2012 consultation

A10.66 In the April 2012 consultation we estimated the industry migration costs resulting from our proposals in two steps. We first provided an assessment of the likely costs of migration on a firm basis in Annex 12. We then used this cost estimate per firm to estimate the migration costs at an industry level. In particular, we estimated the costs of migration of SPs in the 0870 and 0845 number ranges under two scenarios: (i) the unbundled tariff; and (ii) geographic rating (the two options considered for these number ranges).[151]

A10.67 In relation to our estimates of migration costs per firm, we explained that there had been few responses from stakeholders regarding these migration costs. We requested additional information from TCPs and hosting providers on the telecoms services used by SPs that had previously migrated away from 0870. We also directly contacted a small number of SPs to ask their views and experience of migration costs. This information enabled a qualitative assessment of whether the actual level of costs that we had identified in the December 2010 consultation for each of the categories of migration costs we had identified was likely to be higher or lower. Finally we drew together this analysis to form a judgement about a reasonable estimate of migration costs to use when assessing the options for intervention.[152]

Assumptions underlying our estimates of migration costs

A10.68 We indicated that the estimates we had presented in the December 2010 consultation reflected the average cost per firm of *immediate* migration. However, we noted that SPs could avoid some of the migration costs by picking the time at which they chose to migrate.[153] For this reason, our assessment of migration costs in the April 2012 consultation took account of the period of time over which a particular cost item was naturally replaced. For example, where an item was replaced comparatively quickly, we assumed it was easier to synchronise the

[151] See paragraphs 11.195 to 11.200 of the April 2012 consultation.
[152] See paragraphs A12.5 to A12.9 of the April 2012 consultation.
[153] See paragraph A12.11 of the April 2012 consultation.

natural replacement of that item with the time at which migration occurs. In these cases, migration costs were thus likely to be lower.[154]

A10.69 We indicated that in our assessment of migration costs we had accounted for two important factors:

i) SPs that chose to migrate would tend to have somewhat lower migration costs, given that SPs with high migration costs were unlikely to choose to migrate; and

ii) SPs could choose when to migrate, allowing them to coordinate migration with other changes in their business in order to reduce costs.[155]

Categories of migration costs

A10.70 We identified the following categories of migration costs:

a) replacement of stationery (e.g. letterheads, business cards);

b) replacement of advertising and promotional material (e.g. brochures, leaflets);

c) replacement of signage (e.g. signs on vehicles and buildings);

d) telecommunications costs (e.g. temporarily operating the 'old' number in parallel with the 'new' number); and

e) administrative and other costs (e.g. staff time, mail shots to actively inform customers of the change).

A10.71 We looked at each of these in turn to form a view of the likely migration costs for a typical SP.

Replacement of stationery

A10.72 We noted that our average stationery cost per firm of £337 in the December 2010 consultation excluded any reductions due to the time at which firms migrate. Taking into account the reductions due to the timing of migration, we considered that the average stationery cost per firm was likely to be lower than our previous estimate. We acknowledged that there could be some SPs, for example banks, for whom these costs were considerably higher than this figure, however, as discussed, we considered SPs that would incur very high costs were less likely to migrate.[156]

Replacement of advertising and promotional material

A10.73 Absent any reductions due to the time at which firms migrate, we noted that in the December 2010 consultation we estimated that the average promotional and advertising cost per firm was £58 to £116. We indicated that we had received additional information suggesting that these figures could be an underestimate. Although we considered that we should be cautious when assessing the weight we should place on this additional information, we concluded that the average advertising and promotional cost per firm was likely to be significantly higher than

[154] See paragraph A12.17 of the April 2012 consultation.
[155] See paragraph A12.20 of the April 2012 consultation.
[156] See paragraphs A12.22 to A12.29 of the April 2012 consultation.

our previous estimate of £58 to £116, even when reductions due to the timing of migration are taken into account.[157]

Replacement of signage

A10.74 In the December 2010 consultation we had estimated that the average vehicle signage cost per firm was £8 to £39, excluding any reductions due to the time at which firms migrate. We considered however that new evidence suggested that we may have underestimated these costs. In particular, this was due to the infrequency with which vehicle signage was replaced, implying that there was limited scope to mitigate these costs by aligning migration with any natural replacement cycle. We therefore concluded that the average vehicle signage per firm was likely to be slightly higher than our previous estimate of £8 to £39, even when the (limited) scope for reductions due to the timing of migration were taken into account.[158]

Telecommunications costs

A10.75 We said the evidence from SPs suggested that telecoms costs were not large. Take up of these services varied, with the only exception being some SPs who were still operating recorded announcements two years after the change (we had previously assumed that they generally would not do so for more than six months). We also acknowledged that, in line with the assumption in the December 2010 consultation, there was little opportunity for SPs to avoid telecoms costs by varying the time at which they migrated. We therefore concluded that the average telecoms cost per firm was slightly higher than our previous estimate of £60.[159]

Administrative and other costs of migration

A10.76 We indicated that it was difficult to judge how representative the additional information from SPs was of the average costs per firm. We also highlighted that those SPs that would incur a very substantial cost were less likely to choose to migrate their number. In line with the position in the December 2010 consultation, we considered that there was little opportunity for SPs to avoid staff costs by varying the time at which they migrated. We concluded that the average administrative and other costs per firm could be significantly higher than our previous estimate of £117, recognising that some SPs did consider that these costs were much larger than the figures we quoted in the December 2010 consultation.[160]

Conclusion on the costs of migration per firm

A10.77 We therefore concluded that the average migration cost per firm, after accounting for any possible reductions in costs through the choice of the time they migrate was likely to be between £1,000 to £2,500, as summarised in Table A10.4 below.

[157] See paragraphs A12.30 to A12.43 of the April 2012 consultation.
[158] See paragraphs A12.44 to A12.53 of the April 2012 consultation.
[159] See paragraphs A12.54 to A12.63 of the April 2012 consultation.
[160] See paragraphs A12.64 to A12.69 of the April 2012 consultation.

Table A10.4: Categories of migration cost[161]

Cost category	2010 estimate of average cost per firm (excludes any reductions due to the time at which firms migrate)	Revised position
Replacing stationery	£337	Lower
Replacing advertising/ promotional material	£58-£116	Significantly higher
Replacing vehicle signage	£8-£39	Slightly higher
Telecoms costs	£60	Slightly higher
Administrative and other costs	£117	Significantly higher
Total	**£580-£669**	**£1,000-£2,500**

<u>Stakeholder comments</u>

A10.78 Several stakeholders considered that our estimates of migration costs per firm were likely to be too low. THA said its members estimated that the costs of physically migrating to a new number would be up to £5,000 per firm.[162] It also provided new evidence indicating that its members' estimates for the costs of communicating and advertising any new number varied up to £15,000.[163]

A10.79 EE argued that two factors suggested that Ofcom should err on the side of caution by assuming that migration costs would be at the higher end of our estimates, namely, that:

- we had recognised the difficulties and uncertainties underlying our estimates of migration costs; and

- given that we had concluded that four out of the five cost estimates for migration costs (Table A12.5 in the April 2012 consultation) were underestimates, it considered that the new range of £1000 to £2500 per migrating SP was still likely to be an underestimate of the relevant costs.[164]

A10.80 In addition, EE disagreed with Ofcom's assumption that SPs that choose to migrate would tend to have lower migration costs. It considered that this would depend on the benefits of migration for the SP. It cited the example of SPs for whom it may be critical to have a 0845 number charged at a geographic rate (at least by some means such as BT). It argued that these SPs might have no alternative but to migrate to 03 under the unbundled tariff. It considered this could be the case of

[161] This was Table A12.5 in Part A, Annex 12 of the April 2012 consultation.
[162] THA, April 2012 consultation response, p.19.
[163] THA, April 2012 consultation response, p.19.
[164] EE, April 2012 consultation response, pp. 36-37.

government, charity, utilities, banking and other "blue chip" 084/087 SPs who may find it valuable to have "low cost" means of being contacted.[165]

Ofcom's response

A10.81 THA commented that some of its members estimated that the costs of migrating could be as high as £5,000 per firm, and that communicating and advertising the new number could cost up to £15,000. We followed this up with THA and it informed us that respondents to a survey of their members had typically identified costs in the region of £1,000 to £5,000. It noted that one member in particular had migrated in 2011-12 and had spent around £1,500 (including staff time and physical infrastructure). We note that this evidence is consistent with the estimates of the migration costs per firm that we presented in the April 2012 consultation (i.e. £1,000-£2,500 per firm). THA noted that the £5,000 estimate came from one organisation which said it would be required to alter its call management system to cope with the change of line. Similarly, the £15,000 communication cost estimate had been provided by a charity which advertised through a wide range of literature, amongst other advertising channels. It noted that the work carried out by the helpline would mean that some literature would need to be reprinted outside of their natural refresh cycle.[166]

A10.82 While we recognise that some organisations may incur migration costs exceeding the estimates we presented in the April 2012 consultation, the evidence available to us suggests that these are likely to be relatively unusual, driven by the specific characteristics of those SPs. In contrast, our estimates of migration costs are intended to reflect the average migration cost across all SPs. We do not consider that the evidence presented by THA shows that the average migration cost should be higher than the estimates we presented in the April 2012 consultation. In fact, our estimates are consistent with some of the evidence presented by THA, showing that one of its members (which migrated in 2011-12) incurred costs towards the bottom of our range of cost estimates. We therefore do not consider that we should change our migration cost estimates to reflect the new evidence presented by THA.

A10.83 We disagree with EE that we should systematically use the upper end of our range of migration costs due to the uncertainty surrounding SPs' migration costs for the same reasons discussed in paragraph A10.29 above. As we discussed in the April 2012 consultation, we have already accounted for the uncertainty surrounding SPs' migration costs by considering a relatively large range of migration costs in our impact assessment.

A10.84 We consider that EE has failed to provide any evidence supporting its view that our migration costs are an underestimation of the true migration costs. We note that in the April 2012 consultation we increased our estimates of upper bound on migration costs by more than 300 percent relative to our estimates at the time of the December 2010 consultation and the lower bound by nearly 100 percent (i.e. an increase from £580-£669 to £1,000-£2,500 per firm). We believe that the resulting range of estimated migration costs is consistent with both the evidence that we received for (and presented in) the April 2012 consultation, as well as the evidence received since the April 2012 consultation. We therefore do not agree with EE's suggestion that it is still an underestimate of the likely migration costs.

[165] EE, April 2012 consultation response, p. 37.
[166] Email from THA to Ofcom dated 21 December 2012.

A10.85 EE states that it is inaccurate to assume that SPs that choose to migrate will tend to have lower migration costs. We note that in the April 2012 consultation we highlighted that there was a limit to the extent to which this assumption lowered migration costs. We recognised, as suggested by EE, that the decision to migrate would ultimately depend on the balance of costs and benefits of migration. We said that in general, the extent to which the average migration cost for those SPs that chose to migrate was lower than the average migration cost for all SPs depended on the extent to which costs and benefits were correlated. For this reason, we placed more weight on the other assumptions we made at the time (i.e. that SPs would be able to mitigate migration costs by choosing the best time to migrate).

A10.86 We agree with EE that some SPs in the 0845 number range for whom it is important that retail calls are charged at geographic rates may decide to migrate to the 03 number range. In fact, our migration cost estimates account for the costs of migration of SPs in the 0845 and 0870 ranges (see next sub-section below), and therefore our migration cost estimates already include the costs of SPs on 0845 that would migrate to 03 to be able to be on a number range charged at a geographic rate.

Migration by 0845 and 0870 SPs

Summary of our position in the April 2012 consultation

A10.87 We used the costs per firm described above to estimate the migration costs that were likely to be incurred by SPs following the introduction of the two options we considered in the April 2012 consultation for the 0845 and 0870 ranges, namely:

i) the unbundled tariff; and

ii) geographic rating.

A10.88 We explained that the introduction of the unbundled tariff could result in migration of SPs on the 0845 and 0870 number ranges that preferred the option of geographic rating. Conversely, there could be SPs that preferred the unbundled tariff to geographic rating, and we assessed the migration costs of these SPs if we imposed geographic rating.[167]

A10.89 We noted that to estimate the costs of the two options considered (i.e. unbundling and geographic rating) it was sufficient to estimate the costs of 0845/0870 SPs migrating *away* from unbundled number ranges. We did not believe it was necessary to estimate the costs of SPs migrating *within* unbundled number ranges (e.g. between 0843 and 0844), as we considered that the likelihood of SPs migrating to other unbundled number ranges was likely to be small, for the reasons discussed in paragraphs 13.12 to 13.16 of the April 2012 consultation.

A10.90 Using our estimates of the number of SPs in each of the two number ranges, we derived four total migration cost scenarios, which depended on the assumed:

- migration cost per firm (including the high and low cost estimate shown in Table A10.4 above); and

[167] See paragraph 13.10 of the April 2012 consultation.

- reaction of SPs to the two different options considered (i.e. the unbundled tariff and geographic rating) derived from the 2011 SP Survey, and including a high migration Scenario 1 and a low migration Scenario 2.

A10.91 Our estimate of migration costs under each of the options and each of the scenarios considered was as described in Table A10.5 below.

Table A10.5: Migration cost estimates for 0845 and 0870 under each of the options considered

	Option 1 (geographic rating)		Option 2 (the unbundled tariff)	
	Migration costs: low	Migration costs: high	Migration costs: low	Migration costs: high
Scenario 1	£2.2m	£5.6m	£4.3m	£10.9m
Scenario 2	£1.3m	£3.3m	£2.2m	£5.5m

Stakeholder comments

A10.92 Several stakeholders broadly agreed with our analysis, including BT.[168] DWP said that estimating the costs of migrating away from 0845 would require detailed analysis, but it considered its high level estimates were within the range quoted by Ofcom.[169]

A10.93 However, several stakeholders disagreed with our analysis. Magrathea suggested that the level of migration was likely to be minimal. It said that as long as the introduction of the unbundled tariff regime had no negative financial impact on SPs using 0870 numbers, then it did not believe there would be a significant amount of migration away from those numbers. Similarly, it considered that migration within unbundled tariff ranges was also likely to be insignificant. However, it considered that migration to 0844/3 numbers could be significant if the 0845 number range was geographically rated or if we imposed migration to 0345.[170]

A10.94 Other stakeholders considered that we had underestimated the actual migration costs resulting from the unbundled tariff. EE noted that in our analysis we discussed the costs of migration of two or three major SPs (for example the major bank response highlighted by Ofcom) and that only accounting for these had the potential to exceed Ofcom's low end estimate for the entire industry. It said Ofcom should therefore factor into its industry cost assessment the migration costs in that vicinity (i.e. in the £0.5m plus range) for at least a handful of such SPs.[171]

A10.95 In addition, EE noted that Ofcom's estimates were based on 0845 and 0870 SPs but that there might be a large number of SPs operating on the 0844/3 and 0871/2/3 ranges who would face similar migration imperatives as a result of Ofcom's proposals. It therefore argued that Ofcom should consider the migration costs of those SPs in its calculations.[172]

[168] BT, April 2012 consultation response, p.26.
[169] DWP, April 2012 consultation response, Q13.2
[170] Magrathea, April 2012 consultation response, Q13.2
[171] EE, April 2012 consultation response, p.37.
[172] EE, April 2012 consultation response, p.37.

A10.96 [✂] and UKCTA raised an issue about the portability of 084/087 numbers to the equivalent 034/037 numbers which were not allocated to the TCP (because they were not the original rangeholder of the equivalent 084/087 number). UKCTA said the proposed changes to 084 and 087 might incentivise some SPs to take up the option of using the equivalent 034 or 037 number. It and the confidential respondent noted that their status was clear in the Numbering Plan but they believed there should be no artificial barriers to the process of porting those equivalent 034/037 numbers to the TCP representing that SP (for example demands for Letters of Authority). [✂] said the mere fact that a 084/087 number was allocated to an SP should be enough for the recipient CP to request the corresponding 034/037 number from the rangeholder. It noted that Ofcom's precise position on this could influence the migration costs for SPs choosing that path. It and UKCTA called on Ofcom to make a formal statement as to the requirements for portability of those numbers.[173]

Ofcom's response

A10.97 Stakeholder comments relate to the following four issues:

- Magrathea considers that migration is likely to be limited due to the lack of financial impact on SPs;
- EE believes that there is an inconsistency between our per firm and industry migration cost estimates;
- EE indicates that we should have included migration costs of SPs on other number ranges; and
- [✂] and UKCTA's comment about the portability of 084/087 numbers.

A10.98 In addition, we have updated our estimates of migration costs to include SPs that get rid of their line. We address each of these comments below.

Lack of financial impact on SPs

A10.99 We agree with Magrathea's comment that SPs are more likely to migrate the larger the financial impact of our decision, and that other factors, such as increased price transparency, may have a smaller impact on migration. We expect that the introduction of the unbundled tariff will not have a significant financial impact on the vast majority of SPs on the 0845 and 0870 ranges. As further discussed in Annex 22, this is because we expect that most SCs are likely to be set at price points which reflect SPs' revenues from current termination rates, minimising disruption to SPs.

A10.100 We consider however that changes to termination rates are not the only factor that may make SPs migrate away from the 0845 and 0870 ranges. We discussed what factors, other than increased costs to SPs, may drive SP migration away from 0845/0870 in paragraph 11.148 of the April 2012 consultation. One of these factors was that the increased transparency of the SC may lead to some SPs not wanting to be seen as 'profiting' or receiving any share of the call costs.

A10.101 In the April 2012 consultation we highlighted, as suggested by Magrathea, that our calculation could overestimate the true industry migration costs, particularly for

[173] UKCTA, April 2012 Consultation response, p.9.

0870 SPs. The reason was that the 2011 SP survey did not have any evidence of the likely reactions of 0870 SPs, and therefore we inferred the behaviour of 0870 SPs from the information we had on 0845 SPs. We assumed that 0870 SPs would react in the same way as 0845 SPs to our proposals[174] and that this was likely to overestimate the true migration costs for 0870 (as further discussed in paragraphs 11.171 to 11.173 of the April 2012 consultation).

Inconsistency between our per firm and industry migration costs

A10.102 We note EE's concern that the lower end of migration costs for 0845/0870 SPs (i.e. £1.3m for geographically rating and £2.2m for unbundled tariff) would be exceeded if we considered, for example, migration of three SPs such as [✂] (a major bank), which indicated that a *forced* reprint of leaflets and other literature could cost over £0.5m.[175] We note however that in the April 2012 consultation, we assumed that the migration costs of SPs such as these would be significantly reduced by our proposal to set a long implementation period, because this was likely to allow flexibility to SPs to decide the time at which they wanted to replace advertising and promotional material and, importantly, to run any updates required by the unbundled tariff in parallel with business as usual reviews.

A10.103 In this regard, as discussed in the April 2012 consultation, [✂] indicated to us that it reviewed this printed material every six months, although it did not always replace it that frequently. Therefore, consistent with our view in the April 2012 consultation, we believe that an implementation period of 18 months (see Section 10) is likely to significantly reduce the advertising and promotional costs associated with migration. For this reason, we believe our estimates of advertising and promotional costs, discussed in paragraphs A12.30 to A12.43 of the April 2012 consultation, remain valid.

A10.104 In addition, we note that in the April 2012 consultation we presented a range (rather than a single estimate) of migration costs. Obviously, each estimate presented reflects a different scenario which in turn tries to reflect different circumstances. We consider that the scenario depicted by EE (i.e. that several large SPs with significant migration costs decide to migrate) should naturally fall within a scenario of high (rather than low) migration costs. In fact, if we considered migration of several SPs with migration costs of around £0.5m, as suggested by EE, these costs would still be below the higher end industry migration costs that we presented in the April 2012 consultation (i.e. the £3.3 to £5.6m costs for geographically rating and £5.5 to £10.9m costs for the unbundled tariff). We note however that we did not place any more weight on the upper end than the lower end estimates of migration costs that we presented in the April 2012 consultation. Given the evidence available to us, we remain of the view that both are similarly plausible.

Migration costs of SPs on other number ranges

A10.105 In relation to EE's view that we should have accounted for the costs of migration of SPs operating on 0844/3 and 0871/2/3, we have investigated this in more detail by assessing the options available to these SPs after the introduction of the unbundled tariff, namely:

i) migrate to a geographically rated number (e.g. 03);

[174] See paragraph 11.195 of the April 2012 consultation.
[175] See paragraph A12.38 of the April 2012 consultation.

ii) migrate to another unbundled number range; or

iii) get rid of their number completely.

A10.106 In terms of the first option, 0845 and 0870 have historically been linked to geographic rates (although not all OCPs have set retail charges at this level – see Section 8 for further details on the current operation of these ranges) and the 03 number range, which is explicitly linked to geographic rates in the Numbering Plan has been available for use since 2007. Therefore, we would expect that SPs that had a strong preference for geographically rated calls would either already be using a 0845/0870 number (and, as discussed above, our migration cost estimates already account for these SPs migrating away from 0845 and 0870) or would already have migrated to the 03 range.

A10.107 In contrast, we believe it is less likely that SPs on other number ranges (e.g. 0844/3 and/or 0871/2/3) will have a similar preference for the calls to be geographically rated. If they did, they would have already selected a range between the 0845/0870/03 which met that purpose when choosing which number range to operate their service on. Therefore, we consider that preference for a geographically rated range is unlikely to drive migration to 03 from 0843/3 and/or 0871/2/3 SPs following the implementation of the unbundled tariff.

A10.108 In the April 2012 consultation we noted that there was an additional factor that may drive migration from 0845 and 0870 to 03 following the introduction of the unbundled tariff and the increased price transparency resulting from the publication requirements associated with it. In particular, we considered that some SPs on these number ranges may not want to be seen as profiting from the revenue sharing that existed in 0845 and 0870, and may therefore decide to migrate after the introduction of the unbundled tariff to avoid any ‘adverse publicity’.

A10.109 We consider however that the scope for ‘adverse publicity’ from the introduction of the unbundled tariff on the 0843/4, 0871/2/3 and 09 ranges, may be limited by the existing publication requirements on these ranges, discussed in more detail in Annex 24, in particular:

- in the case of 0871/2/3 and 09 ranges, these are already subject to a requirement to publish pricing information for the cost of calling the numbers under PhonepayPlus’ Code of Practice;

- for 0843/4 numbers, the Committee of Advertising Practice (‘CAP’) which issues recommendations on how advertisers can ensure compliance with the Advertising Codes administered by the Advertising Standards Authority (‘ASA’), states that advertisements that include calls to NTS numbers that cost more than calls to a landline (e.g. 0843 and 0844 numbers) should state the cost for customers on BT’s Unlimited Weekend Plan.[176]

A10.110 We therefore believe that the existing publication requirements on 0843/4, 0871/2/3 and 09 ranges already provide an indication to callers that they are revenue sharing ranges which involve an additional charge above geographic rates. In addition, compared to 0843/4, 0871/2/3 and 09, the 0845 range in particular typically includes SPs (e.g. charities) which are the most likely to be negatively affected by

[176] See http://www.cap.org.uk/Advice-Training-on-the-rules/Advice-Online-Database/Chargeable-08-numbers-General.aspx

any publication requirement showing that they benefit from revenue sharing on these ranges.

A10.111 Furthermore, SPs on these number ranges would have to forgo considerable revenue if they migrated to 03. This is in contrast to 0845/0870, where SPs are far less likely to have selected these number ranges with the purpose of obtaining revenue share and, in any event, the revenue share at stake is significantly lower (SPs on this range often do not receive any revenue directly, but instead have reduced hosting costs compared to a non-revenue sharing range). In light of the above, we consider it less likely that SPs on the 0844/3 and 0871/2/3 ranges will migrate to 03.

A10.112 In terms of the second option, migration to another unbundled number range, we explained in paragraphs 13.10 to 13.16 of the April 2012 consultation what factors may drive migration within unbundled tariff number ranges. We considered, in particular: (i) a reduction in the number of SC price points; (ii) changes in termination rates and (iii) increased competitive pressure on SPs. We remain of the view that the introduction of the unbundled tariff is unlikely to result in significant migration from 0843/4, 0871/2/3 or 09 SPs to other number ranges for the same reasons discussed in the April 2012 consultation, namely:

- even if OCPs only bill a minimum of 100 price points in line with our requirement, this is likely to encompass most traffic (more than 90%) on 084/087 and 09 ranges. Hence we do not expect that a reduction in the number of SC price points will result in significant migration, because the great majority of SPs are on price points that can be replicated under an unbundled tariff structure;

- TCPs are likely to be sensitive to the needs of their SP customers and are thus unlikely to adopt SCs that are significantly different to existing termination rates, to ensure minimal disruption to the operation of their SPs; and

- the unbundled tariff is likely to increase competitive pressures on SPs, which could lead to some migration (for example, SPs migrating to numbers with lower SC price points). However, we noted in the April 2012 consultation that it was difficult for us to determine the extent of migration as a result of this effect. Furthermore, we believe that any migration resulting from increased competition between SPs is likely to result in net benefits to consumers in the long term, be it in the form of reduced prices and/or increased innovation and service quality. We therefore consider that it is not necessary to factor in additional migration costs resulting from increased competition, as we would equally need to account for benefits of the same or even larger magnitude.

A10.113 As discussed above, we do not consider that the introduction of the unbundled tariff is likely to result in material migration costs for SPs on the 0843/4, 0871/2/3 and 09 number ranges. For this reason we have not accounted for these costs in our estimate of migration costs.

Portability of 084/087 numbers

A10.114 In relation to [✂] and UKCTA's point about the porting process, we recognise that the implementation of the unbundled tariff may lead some SPs to choose to migrate to the 03 range and we agree that this process should be as smooth as possible to aid that migration; this was the intention behind the following requirement in the Numbering Plan in relation to the 034/037 ranges:

> "Those Communications Providers who Adopt or otherwise use Non-Geographic Numbers starting 034 or 037 shall only do so for the purpose of providing a service to a Customer who is migrating from a Non-Geographic Number starting 084 or 087 which is exactly identical to the 034 or 037 number expect for the second digit (a "matching 084 or 087 number"). A Non-Geographic Number starting 034 or 037 shall not be adopted or otherwise used by a Communications Provider where no matching 084 or 087 number is in use by a Customer" (section B3.2.3)

A10.115 In other words, the 034/037 numbers are reserved specifically for SPs who are operating services on the equivalent 084/087 numbers and therefore any 034/037 number range holder should not be using a particular 034/037 number if an SP offers a service on the equivalent 084/087 number.

A10.116 Where a TCP is not the allocated number rangeholder for the particular 034/037 number block which an SP requires (because the SP has ported their 084/087 number) the TCP will need to make a request to the number range holder for that 034/037 number to be ported so their SP can migrate its service to that number.

A10.117 The requirements for portability are set out in General Condition 18. In particular, GC18.1 requires communications providers to provide "Number Portability" to subscribers which request it in the shortest possible time and on reasonable terms and conditions. Number Portability is defined in GC18.11 as:

> "a facility whereby Subscribers who so request can retain their Telephone Number on a Public Communications Network, independently of the person providing the service at the Network Termination Point of a Subscriber provided that such retention of a Telephone Number is in accordance with the National Telephone Numbering Plan".

A10.118 In addition GC18.5 requires communication providers to provide "Portability" on request from another provider as soon as is reasonably practicable and on reasonable terms. "Portability" is defined in GC18.11 as a facility provided by one communications provider to another to enable a subscriber requesting number portability to continue to be provided with a telephone service by reference to the same telephone number, regardless of the identity of the person providing that service

A10.119 In our view, because of the reservation which applies to 034 and 037 numbers in the Numbering Plan, we consider that a number within those ranges should be treated as the telephone number of the SP using the matching 084/087 number, even if the SP has not yet migrated its services to the 03 range. Accordingly, in the event of a request by the SP to its TCP to migrate to the equivalent 034/037 number, that request should be treated as within the scope of the obligations in GC18 set out above, in the event that the TCP is not the allocated number range holder.[177]

A10.120 Accordingly, we do not consider it necessary to specify a porting process for these numbers which is different to the existing porting process for non-geographic

[177] Such an approach to the application of GC18 would also be consistent with the obligation of the 034/037 rangeholder under GC17.6 to secure that the numbers are adopted or otherwise used effectively and efficiently.

numbers. Furthermore, compliance with the porting obligations in GC18 should ensure that there are no, 'artificial barriers' which would create additional migration costs for SPs on the 084/087 ranges.

Update of migration costs to include SPs that get rid of their line

A10.121 In light of a comment made by EE in relation to our migration costs for the 080 range (see paragraph A10.130 below) we have decided to update our estimates of migration costs. Whereas our April 2012 consultation only took into account the migration costs of SPs that (i) switch line and calls to a different line the SP already have or (ii) get a new number and used that instead; we consider it is appropriate to include as well those SPs that answered that they would get rid of their line.

A10.122 The reason is that SPs who get rid of their line may incur similar costs to those switching to another number. For example, they may want to replace advertising material or remove any vehicle signage. However, we consider that there are some categories of costs (e.g. telecoms costs) that may not apply, or may not apply to the same extent, in the case of SPs who get rid of their line. We have nonetheless treated these SPs in the same way as those who switch to another number (i.e. we have considered that their migration costs per firm are the same). We consider that this is likely to overestimate the level of migration costs.

A10.123 In Table A10.6 below we present the total percentage of SPs whose reaction may result in migration costs (including, as discussed above, SPs who get rid of their line).[178]

Table A10.6: Percentage of total 0845 and 0870 SPs whose reaction may result in migration costs

	Option 1 (geographic rating)	Option 2 (the unbundled tariff)
Scenario 1	17%	29%
Scenario 2	9%	15%

A10.124 Following the changes to the share of SPs migrating, we present in Table A10.7 below the updated estimate of migration costs.

[178] To obtain the share of SPs that migrate away from 0845/0870 we use the 2011 SP survey. Question 31 of the survey asked SPs which of the two options we proposed (i.e. geographic rating or unbundled tariff). Questions 32/33 of the survey asked 0845 SPs what they would do if we adopted the option that they had not favoured in response to Question 31. The SPs that are considered in our estimation of migration costs are those who responded that they would (i) switch line to another number they already had; (ii) got a new number and use that instead; or (iii) got rid of their line. The responses in the 2011 SP survey are adjusted to a smaller base of responses to account for SPs that responded "don't know" (i.e. we subtract the percentage of SPs who responded "don't know"). We asked a follow up question requesting SPs to tell us how likely they were to act as they had indicated in responding to Q32/33 (i.e. "very likely", "fairly likely", etc.). The Scenario 1 adjusts responses to Q32/33 by the percentage of respondents that answered that they were "very likely" or "fairly likely" to act as they had indicated in responding to Q32/33. The Scenario 2 adjusts responses to Q32/33 by the percentage of respondents that answered that they were "very likely".

Table A10.7: Migration cost estimates for 0845 and 0870 under each of the options considered

	Option 1 (geographic rating)		Option 2 (the unbundled tariff)	
	Migration costs: low	Migration costs: high	Migration costs: low	Migration costs: high
Scenario 1	£3.7m	£9.2m	£6.3m	£15.8m
Scenario 2	£2.0m	£4.9m	£3.4m	£8.5m

080 free-to-caller

Summary of our position in the April 2012 consultation

A10.125 In the case of the 080 range, we conducted a similar analysis to that described above for the unbundled tariff. That is, we used the same cost estimate per firm to calculate the migration costs incurred by SPs migrating away from 080 following a decision to make it free–to-caller.[179] As described in paragraphs 16.204 to 16.209 of the April 2012 consultation, we estimated the migration costs of making the 080 range free-to-caller using:

- average costs of migrating per firm (calculated as described above and including a high and low migration cost estimate);
- estimates of the number of SPs on the 080 number range; and
- reactions of SPs to mobile origination payments lying within the Impact Assessment Range we presented in the April 2012 consultation (2.5-3.0ppm) based on responses to the 2011 SP survey (including a high and a low migration scenario).[180]

A10.126 We estimated the costs of migration for the 080 range as described in Table A10.8 below.

Table A10.8: Estimate of migration costs of making 080 range free-to-caller

Proportion of SPs migrating	Estimate of migration costs
High	£4.6m to £11.4m
Low	£2.6m to £6.6m

A10.127 We considered there would be no significant migration costs associated with the other option we considered for the 080 range, namely, the Maximum Mobile Price. This was because under this option SPs were unlikely to face a significant increase in the costs of operating a 080 number. Therefore, SPs were unlikely to migrate elsewhere.[181]

[179] See paragraphs 16.204 to 16.209 of the April 2012 consultation.
[180] See paragraphs 16.204 to 16.209 of the April 2012 consultation.
[181] See, for example, paragraphs 16.241 or 16.246 of the April 2012 consultation.

Stakeholder comments

A10.128 There were few stakeholder comments relating to our assessment of migration costs for the 080 range. [✂] supported our conclusions.[182]

A10.129 EE made several detailed comments on our estimates of migration costs. As in the case of the unbundled tariff, it argued that we should only use the upper end of the range of the per firm costs (i.e. £2,500). It considered that an SP's decision to migrate, as a result of the 080 range being mandated as free-to-caller, could not be considered voluntary if the SP cannot afford higher origination charges. EE considered that this reinforced the view that we should only use the upper end of our cost assessment range.[183] Similarly, it considered that our estimates should factor in migration costs in the £0.5m range for at least a handful of major 080 SPs.[184]

A10.130 EE commented on one of the results of our 2011 SP survey. In particular, it found it surprising that our survey found that only 60% of the SPs who would get rid of their current 080 number if it were made free-to-caller would migrate to another number range, as this would mean that almost half would go out of business or use a means of contact other than a telephone number. It argued that this could reflect that some SPs that have more than one contact number could decide to close one of these. It was concerned that our estimates of migration costs would not account for these SPs whereas the costs of changing stationery and signage to remove the reference to the obsolete 080 number would be very similar to the costs resulting from migration to a new number. It considered we should further investigate this issue and update our migration cost estimates accordingly.[185]

A10.131 EE noted that the figures used in section 16 of the April 2012 consultation were inconsistent with the figures used in Annex 25 of that document. According to EE, our statement in the latter that making 080 free-to-caller would result in 33% of SPs migrating to the Maximum Mobile Price 0500 range differed from our assumption in section 16 that only 6.6%-11.4% of SPs would migrate as a result of our proposals.[186]

Ofcom's response

A10.132 In relation to EE's comment that we should only use the upper end of our range of migration costs and that we should factor in costs for some SPs in the range of £0.5m, we have already responded to this in paragraph A10.29 above.

A10.133 In terms of EE's comment about our 2011 SP survey, we stated in paragraph 16.205 of the April 2012 consultation that 19% of respondents said they were "very likely" or "fairly likely" to withdraw their number. We then explained that 60% of these said they would migrate their 080 service to another number range, and we indicated that there was some uncertainty around this number given the small sample size (equal to 65 respondents). EE argues that this 60% seems unreasonably low, as it would imply that almost half (i.e. the remaining 40% of SPs that would get rid of their number) would go out of business or use another means of contact other than the telephone. It pointed out that the low figure could be due to

[182] [✂]
[183] EE, April 2012 consultation response, p. 54.
[184] EE, April 2012 consultation response, p. 54.
[185] EE, April 2012 consultation response, p. 54.
[186] EE, April 2012 consultation response, p. 54.

some SPs switching to another number they already had and it feared that we would have not accounted for these SPs in our estimate of migration costs.

A10.134 We disagree with EE's view that our migration cost estimates did not account for SPs migrating to a number they already had. The answers to the question that investigated what SPs would do if they got rid of their number (question 18 of the 2011 SP Survey) were as follows:

- 34% said they would switch the line to another number they already had;
- 26% said they would migrate to a new non-Freephone number and use that instead;
- 20% said they would block calls from mobiles;[187]
- 15% would get rid of the line completely; and
- 5% did not know.[188]

A10.135 In other words, the 60% that we considered in the April 2012 consultation was the sum of the 34% that said they would switch to another number they already had and the 26% of SPs that answered that they would migrate to another number. This shows that our migration cost estimates did account for SPs that had more than one contact number and would decide to switch to one of these.

A10.136 EE also made the point that the figures we presented in section 16 of the April 2012 consultation are inconsistent with the figures used in Annex 25. We disagree because the figures quoted by EE relate to two different questions asked in the 2011 SP Survey. In section 16 we explained that 11% of respondents to the survey were "very likely" to withdraw their 080 number if total outpayments increased by 1ppm, and 7% were "fairly likely".[189] As highlighted by EE, we also asked SPs about their relative preferences between making 080 free-to-caller or a Maximum Mobile Price, and we reported the answers in Table A25.1 of Annex 25 quoted by EE.[190]

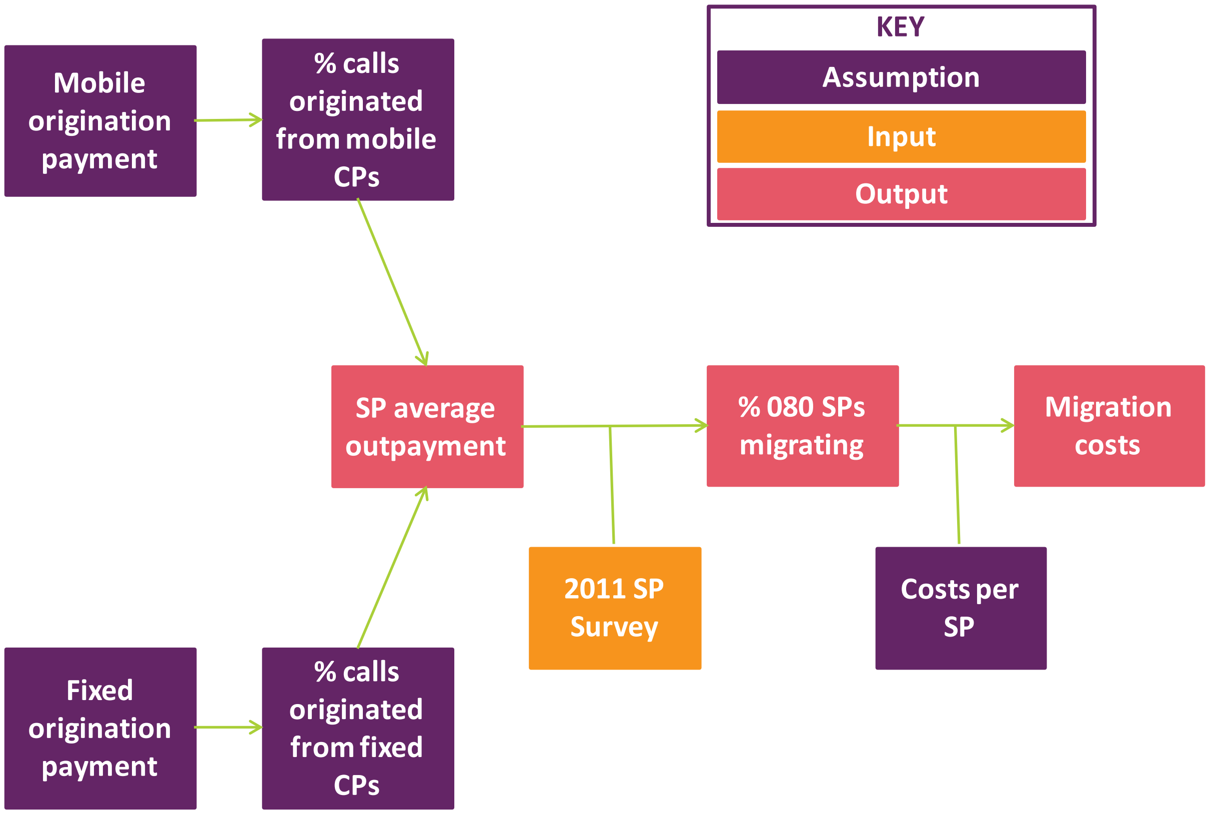
A10.137 We would like to reiterate that these are different questions and, in fact, it is unsurprising that the answers provided by SPs to each differ. For example, some SPs may prefer a Maximum Mobile Price range than a free-to-caller range if outpayments increase by 1ppm (33% of respondents to the survey), however, this does not necessarily mean that all those preferring MMP will decide to withdraw their number if we made 080 free-to-caller, as they may still prefer to remain on 080 than moving elsewhere. In fact, the share of respondents that indicated they were "very likely" or "fairly likely" to withdraw their 080 number at an increase in their total outpayments of 1ppm was only 19% (a significantly smaller share than those that said they would prefer a Maximum Mobile Price range on 080).

[187] We recognise that such blocking of calls would be effectively prevented by our proposed access condition and take this into account in our interpretation of this response as set out in Update of Migration Costs below.
[188] See questions 17 and 18 of the 2011 SP survey, available at http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/Non-geographic-numbers.pdf
[189] See for example paragraph 16.173 of the April 2012 consultation. This relates to question 18 of the 2011 SP survey.
[190] See question 20 of the 2011 SP survey.

Update of migration costs

A10.138 There are different factors that determine the level of migration costs that are likely to arise as a result of making the 080 range free-to-caller. We depict these in Figure A10.9 below.

Figure A10.9 Factors affecting the level of migration costs associated with making 080 free-to-caller



A10.139 In Figure A10.10 we show that the main factor affecting migration costs is the average SP outpayment that may arise if the 080 range is made free-to-caller, as this will determine the proportion of SPs that migrate away from 080.[191] Therefore, in order to estimate these migration costs we need to assess first the level of SPs' outpayments and the extent of migration that is likely to arise.

A10.140 If the 080 range is made free-to-caller, mobile OCPs will no longer be able to charge their retail customers for calls to these numbers. As we discuss in more detail in Section 13, making 080 free-to-caller will result in several structural changes to the functioning of the 080 number range that are likely to affect the amount that SPs pay to OCPs (via their host TCP) for originating calls to 080 numbers. In particular, the average outpayment made by SPs will depend on the:

- level of the fixed origination payment;
- level of the mobile origination payment; and

[191] In addition, the migration costs will be affected by the costs of migrating for each SP. We assume the same costs per firm as in the case of the unbundled tariff, that is, £1,000-£2,500 (as discussed in the previous section).

- extent of fixed to mobile substitution resulting from calls to 080 numbers being zero rated.

A10.141 In other words, in order to determine the average SP outpayment that is likely to arise as a result of making 080 free-to-caller (and the associated level of SP migration away from 080) we need to determine the likely magnitude of each of these factors. For example, assume that after the 080 range is made free-to-caller, (i) the fixed origination payment is 0.5ppm; (ii) the mobile origination payment is 2.5ppm; and (iii) 50% of calls to 080 are originated from fixed CPs and 50% from mobile. In this case, SPs' average outpayments would be 1.5ppm (i.e. an increase of 1ppm relative to the average outpayment that existed before the introduction of tiered termination rates).[192]

A10.142 We use the 2011 SP survey to estimate the level of SP migration away from the 080 range associated with this level of average outpayments (the 2011 SP survey asked for SPs' reactions to different increases in the level of hosting charges they currently pay). In our example, according to the 2011 SP survey (question 17), 19% of respondents said they were "very likely" or "fairly likely" to withdraw their 080 number if their hosting charges increased by 1ppm.

A10.143 In the April 2012 consultation we assumed that, if the 080 range were made free-to-caller, the share of calls originated from mobile would increase to between 40%-50%. In addition, we assumed that fixed origination payments would remain at the level prevailing before the introduction of tiered termination rates (i.e. 0.5ppm) and that mobile origination payments would lie within the Impact Assessment Range ('IAR'), which we had estimated at 2.5-3.0ppm. We noted that mobile origination payments within this range equated to an increase in SPs' costs of operating a 080 number of 1ppm[193] (or equivalently an average SP outpayment of 1.5ppm[194]). We then used the 2011 SP survey to determine the likely extent of SP migration away from the 080 range as a result of this level of increase in SPs' outpayments.

A10.144 As further discussed in Section 12, we no longer believe that it is appropriate to assume that fixed origination payments will necessarily remain unaltered at 0.5ppm. Instead, we use an IAR for fixed origination payments of between 0.3-0.6ppm. In addition, we also consider that it is more appropriate to distinguish between two differentiated ranges in the case of mobile origination payments. Using the currently available evidence, our latest estimates of these ranges, as shown in Section 12, are:

- Base case scenario range: 1.3-3.0ppm, although we place more weight on values within 1.5-2.5ppm for the reasons discussed in Section 12; and

- Impact Assessment Range ('IAR'): 1.0-3.7ppm.

A10.145 Similarly, we have revised our assumption about the likely share of calls to 080 that will be originated from mobiles (if the 080 range was made free-to-caller) to 45%-60% (as further discussed in Section 12).

[192] In other words, 0.5ppm x 50% (of calls originated from fixed CPs) + 2.5ppm x 50% (of calls originated from mobile CPs) = 1.5ppm.
[193] See paragraph 16.205 of the April 2012 consultation.
[194] The average SP outpayment before the introduction of tiered termination charges was 0.5ppm, hence, an increase of 1.0ppm in average outpayments would result in 1.5ppm.

A10.146 The fact that we assume ranges (instead of single values) for each of the determinants of SPs' outpayments described above has implications for our estimation of migration costs. It means that our estimate of the level of outpayments (and, hence, migration) will vary depending on the value that we choose within those ranges. We have not attempted to derive the level of outpayments and migration implied by all the possible values of the ranges that we have assumed. Instead, we focus only on two scenarios: those that result in the maximum and minimum level of outpayments (and, correspondingly, the maximum and minimum level of SP migration). This is sufficient because it allows us to obtain the upper and lower bound of the range of possible levels of migration.

A10.147 In order to do this, we define a scenario where the SP outpayments are the highest (which result in the highest migration), and a scenario where they are the lowest possible (resulting in the lowest migration), taking into account our assumptions about fixed and mobile origination payments and the extent of fixed to mobile substitution. These scenarios are as follows:

- 'Highest outpayment' scenario: the highest level of outpayments would arise if mobile origination payments were 3.7ppm, the fixed origination payment was 0.6ppm and the share of calls originated from mobile was 60%.[195]

- 'Lowest outpayment' scenario: the lowest level of outpayments would arise if mobile origination payments were 1.0ppm, the fixed origination payment was 0.3ppm and the share of calls originated from mobile was 45%.[196]

A10.148 The average outpayment under each of these scenarios is as follows:

- 'Highest outpayment' scenario: 2.4ppm;[197] and

- 'Lowest outpayment' scenario: 0.6ppm.[198]

A10.149 Using the average outpayments calculated in each of these scenarios we can estimate the proportion of 080 SPs that are likely to migrate away from the range by looking at SPs' responses to question 17 of the 2011 SP survey. In line with our approach in the case of the unbundled tariff (see paragraph A10.121 above), we have now included SPs that would withdraw their line when estimating the costs of migration for the 080 range. We also assume that all of those SPs who responded that they would block calls from mobile as a response to increases in hosting charges will migrate to another number range.[199] We present our estimate of the

[195] In other words, the highest average outpayment will arise when the fixed and mobile origination payments are at the upper bound of the ranges we have assumed. As we assume a higher mobile origination payment (i.e. 3.7ppm) than the fixed origination payment (i.e. 0.6ppm), the highest average outpayment will be reached when the share of calls originated from mobile is at the upper bound of the range that we have assumed (i.e. 60%).

[196] In other words, the lowest average outpayment will arise when the fixed and mobile origination payments are at the lower bound of the ranges we have assumed. As we assume a higher mobile origination payment (i.e. 1.0ppm) than the fixed originiation payment (i.e. 0.3ppm), the lowest average outpayment will be reached when the share of calls originated from mobile is at the lower bound of the range that we have assumed (i.e. 45%).

[197] That is, 3.7ppm x 60% + 0.6ppm x 40% = 2.46ppm.

[198] That is, 1.0ppm x 45% + 0.3ppm x 55% = 0.62ppm.

[199] As discussed above, question 18 of the 2011 SP survey asked respondents that had answered that they were "very likely" to get rid of their line for any increase in hosting charges in question 17, what would be their reaction. 20% of respondents said they would block calls from mobile. If blocking calls had been a viable option, it may have implied actual migration was likely to be lower than the

proportion of all 080 SPs whose reaction may result in migration costs in Table A10.10 below.

Table A10.10: Percentage of total 080 SPs whose reaction may result in migration costs

	Highest outpayment	Lowest outpayment
Scenario 1[200]	36%	18%
Scenario 2[201]	24%	8%

A10.150 The 'Highest outpayment' scenario relates to an average outpayment of around 2.4ppm or, equivalently, an increase in average outpayments of 1.9ppm (relative to the average outpayment of 0.5ppm prevailing before tiered termination rates were introduced). In the case of the 'Lowest outpayment' scenario the value is 0.6ppm or a 0.1ppm increase. For the purposes of assessing the extent of migration we have used the share of respondents that said they were "very likely" or "fairly likely" to get rid of their 080 number in the case of Scenario 1, but only "fairly likely" in Scenario 2 in their response to question 17 of the 2011 SP survey. We used the share of SPs that said they would get rid of their line if outpayments increased by 0.5ppm for the 'Lowest outpayment' scenario, 2.0ppm in the case of the 'Highest outpayment' scenario. This is likely to overestimate migration in both scenarios. In the case of the 'Lowest outpayment' scenario, 0.5ppm was the smallest increase we accounted for in the 2011 SP survey and we therefore had to use this. In the case of the 'Highest outpayment' scenario, given that the 1.9ppm increase is closer to 2.0ppm we have used this outpayment increase (rather than 1.5ppm). However, this is likely to slightly overestimate the migration costs. Overall we estimate that between 8%-36% of SPs could migrate away from 080 following a decision to make the range free-to-caller.[202] In line with the April 2012 consultation, we have used an industry estimate of 40,000 SPs operating on the 080 number range.[203]

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total percentage of SPs indicating they were "likely" or "very likely" to get rid of their line. This is because a material proportion of these SPs may instead have chosen to retain their line but block calls from mobile to avoid any increase in hosting charges. However, we now acknowledge that call blocking will be effectively prevented by our proposed access condition, which will require an SPs' host TCP to purchase origination for 080 calls upon reasonable request (as further discussed in Section 14). We consider that some of these SPs who would have chosen to block calls from mobile may resort to alternative measures to mitigate the cost of calls from mobile (as discussed in more detail in Section 12. However, we also recognise that some of these SPs may now choose to migrate. We have been unable to determine the extent to which SPs are likely to react to higher origination payments using each of these alternatives. For this reason, for the purposes of our estimation of migration costs, we have assumed that all of the 19% of SPs who responded that they were "very" or "fairly likely" to get rid of their 080 line will migrate to another number range. We note that this is likely to overestimate the level of migration costs as we anticipate some of these SPs will employ cost mitigation measures and remain on the range.[200] Scenario 1 reflects share of respondents answering that they were "very likely" or "fairly likely" to get rid of their 080 line.

[200] Scenario 1 reflects share of respondents answering that they were "very likely" or "fairly likely" to get rid of their 080 line.

[201] Scenario 2 reflects share of respondents answering that they were "very likely" to get rid of their 080 line.

[202] We note however that in practice we would not expect the share of SPs that withdraw their 080 number to exceed 19%. This is because we expect that CPs' commercial negotiations relating to origination payments will be driven by our guidance on fair and reasonable origination charges. In the

A10.151 Using these two estimates of migration levels and the migration costs per firm described in paragraph A10.77 above, we present the updated migration costs in Table A10.11 below.

Table A10.11: Estimate of migration costs of making the 080 range free-to-caller using the wider IAR range

	High migration costs	Low migration costs
High migration (36% of 080 SPs)	£36.0m	£14.4m
Low migration (8% of 080 SPs)	£8.0m	£3.2m

A10.152 We also estimate the migration costs resulting from assuming origination payments within our Base case scenario range. As discussed in more detail in Section 12, under our Base case scenario range we only include combinations of assumptions that result in an average SP outpayment of between 1.0-1.5ppm (or an increase in hosting charges of 0.5-1.0ppm relative to the charges that prevailing prior to the introduction of tiered rates). According to the 2011 SP survey, increases in hosting charges of this magnitude would result in around 8% to 19% of 080 SPs withdrawing their number.[204] Table A10.12 below presents our estimates of migration costs when assuming the Base case scenario range.

Table A10.12: Estimate of migration costs of making the 080 range free-to-caller using the Base case scenario range

	High migration costs	Low migration costs
High migration (19% of 080 SPs)	£19.0m	£7.6m
Low migration (8% of 080 SPs)	£8.0m	£3.2m

Misdialling costs

Unbundled tariff

Summary of our position in the April 2012 consultation

A10.153 In the April 2012 consultation we estimated the costs to consumers of misdialling 0845/0870 numbers after SPs on these ranges would have migrated away following the introduction of the unbundled tariff.

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guidance that we are consulting on today we have set out that the range of fair and reasonable origination payments is between 1.3-3.0ppm, and that we place more weight on payments within 1.5-2.5ppm. This is because on the basis of the currently available evidence origination payments within this range are less likely to result in average SP outpayments exceeding 1.5ppm, which we would not consider fair and reasonable. According to the evidence from the 2011 SP survey, average outpayments below 1.5ppm are unlikely to result in more than 19% of 080 SPs withdrawing their number.

[203] [✂]

[204] The 8% reflects the SPs responding "very likely" to get rid of their line when hosting charges increase by 0.5ppm. The 19% reflects the sum of the SPs responding "very likely" and "fairly likely" when hosting charges increase by 1ppm.

A10.154 We said that the assumption made in the December 2010 consultation that 10% of calls in the first year are misdialled seemed broadly consistent with our 2011 consumer survey.[205] We therefore concluded that to estimate misdialling costs we should assume that on average 10% of calls in the first year to SPs that had migrated were misdialled.[206]

A10.155 We then estimated the total number of calls to 080, 0845 and 0870 numbers using (i) the total number of fixed and mobile call minutes from the 2010 Flow of Funds and (ii) the average duration of calls to each of these number ranges. We estimated the following number of calls in 2009:

- 080 - 1.8bn;
- 0845 - 2.0bn; and
- 0870 - 0.6bn.[207]

A10.156 In the case of 0845 and 0870 ranges, we estimated misdialling costs for each of the two options considered, that is, (i) geographic rating and (ii) the unbundled tariff using the following costs of misdialled calls:

- for geographic rating, the cost of calls would be equal to the cost of calling a geographic number. We assumed a cost of 3.5ppm and 6.1ppm for fixed and mobile calls, respectively;
- for the unbundled tariff, we assumed charges (including an AC and SC) of 4.9ppm and 18.1ppm for fixed and mobile calls, respectively (this assumed a SC of 2ppm, which was the average outpayment from OCPs to TCPs on 0845 in 2009, including VAT); and
- we assumed that the average duration of a misdialled call would be one minute, consistent with our assumption that OCPs would be able to bill a one minute minimum call.[208]

A10.157 In addition, we estimated two cost scenarios using the same assumptions as for migration costs, that is, a Scenario 1 with a higher percentage of SPs migrating away and a Scenario 2 with a lower percentage. We estimated misdialling costs for each of the options considered as in Table A10.13 below.[209]

Table A10.13: Misdialling costs for 0845 and 0870

	Option 1 (geographic rating)	Option 2 (the unbundled tariff)
Scenario 1	£1.8m	£3.6m
Scenario 2	£1.1m	£1.8m

[205] See paragraph A12.81 of the April 2012 consultation.
[206] See paragraphs A12.84 to A12.85 of the April 2012 consultation.
[207] See paragraph A12.82 to A12.83 of the April 2012 consultation.
[208] See paragraph 11.197 of the April 2012 consultation.
[209] This reproduces Table 11.8 of the April 2012 consultation.

Stakeholder comments

A10.158 We received few comments on misdialling costs in general. CWW recognised that the information available on misdialling costs was scarce and that it did not have any additional information that could help inform Ofcom of those costs.[210]

A10.159 EE highlighted what it considered to be an error in the total misdialling cost estimates. It said in paragraph 13.10 of the April 2012 consultation we suggested misdialling costs were between £1.1m and £3.6m. It considered that this was a mis-transcription of the actual figure shown in Table 11.8 (i.e. £1.8m, the misdialling costs for the unbundled tariff under Scenario 2). It argued that we corrected this error in paragraph 13.11 where we stated that total migration and misdialling costs for the unbundled tariff were £4m (i.e. £2.2m plus £1.8m) but that we made another error on the upper end of the range where we said total costs were £14.4m and should have been £14.5m (i.e. £3.6m plus £10.9m).

A10.160 EE also said it considered our estimates would be a material underestimate of misdialling costs for the following reasons:

i) the figures were based only on the costs of misdialled calls to 0845 and 0870 numbers. EE considered that 0844/3 and 0871/2/3 should also be included;

ii) the SC element of the misdialled calls was only estimated at 2ppm. EE considered that given the proposed SC maxima were 7ppm for 084 and 13ppm for 087, actual misdialling costs could be significantly higher;

iii) no misdialling costs were allocated for calls to SPs who were likely to get rid of their existing numbers. It said that if customer misdialling propensities for those SPs were the same as for migrating SPs then that would suggest that Ofcom's current misdialling estimates should be inflated by around a further 50%. EE argued that it was not appropriate for Ofcom to simply discount those costs outright; and

iv) no allocation had been made for the consumer time cost involved in misdialling the incorrect number and redialling the correct one.[211]

A10.161 EE also noted that the unbundled tariff could create confusion across other number ranges and therefore the indirect costs might be even more significant. For example, it considered that those who had misdialled numbers could be less likely to make certain NGCs again in future. In addition, consumers affected by this could warn friends or family not to call not just that particular number but others as well. It said this had the potential to affect millions of UK consumers and Ofcom had not factored in this type of cost. EE noted that in the same way that Ofcom had argued that there were horizontal externalities in the NGC market, similarly, there could be such externalities created by Ofcom's intervention.[212]

Ofcom's response

A10.162 Only EE provided comments on our estimates of misdialling costs. While we disagree with some of the criticisms put forward by EE, we have conducted additional analysis to address some of EE's comments on our approach to

[210] CWW, April 2012 consultation response, p.29.
[211] EE, April 2012 consultation response, pp.37-38.
[212] EE, April 2012 consultation response, p.39.

estimating misdialling costs. In addressing these comments we have revisited the methodology we used to estimate misdialling costs under the option of geographically rating in the April 2012 consultation. In light of these issues, our response below is structured as follows:

- we first address EE's criticisms of our misdialling cost estimates presented in the April 2012 consultation;
- we then update our estimates of misdialling costs, taking into account some of the comments received by EE, as well as revisiting the estimates of misdialling costs that we presented in the April 2012 consultation; and
- finally, we estimate the consumer time cost resulting from consumers' misdialled calls, as suggested by EE.

A10.163 We look at each of these issues in turn below.

Criticisms of our misdialling cost estimates presented in the April 2012 consultation

A10.164 In relation to EE's comment that we wrongly reported misdialling costs in paragraph 13.10 of the April 2012 consultation, we agree that the range of misdialling costs for the unbundled tariff should have been £1.8m to £3.6m (rather than £1.1m to £3.6m). As regards EE's second point, we confirm that the estimate of migration costs that we presented in that paragraph (i.e. £14.4m) was correct and the difference with EE's reported estimate (i.e. £14.5m) is solely due to the rounding of our figures.

A10.165 We disagree with EE that we should have estimated misdialling costs for 0843/4 or 0871/2/3 because, as discussed above in paragraphs A10.105 to A10.113 above, we do not consider that migration away from these numbers will be material.

A10.166 We similarly disagree with EE's view that we should have assumed a different SC to estimate misdialling costs. As discussed in the April 2012 consultation, our SC estimate (i.e. 2ppm) was based on the average outpayment from OCPs to TCPs on 0845 calls in 2009 (inclusive of VAT) from the 2010 Flow of Funds study.[213] We disagree with EE that the fact that we are setting SC caps on 0845 and 0870 at a higher level implies that we should use a higher SC to estimate misdialling costs. As we have discussed in more detail in Annex 21, we are setting the SC caps at the same level as BT's current maximum termination rates for these two number ranges. However, the average outpayment from OCPs to TCPs in 2009 was 2ppm, significantly below the maximum termination rate. We consider that average termination rates are likely to remain below the maximum to ensure that SPs' activities are not materially affected by the introduction of the unbundled tariff, as further discussed in Annex 21. For this reason, we continue to believe that it was right to assume that the SC applicable to misdialled calls to 0845 and 0870 would be around the current average of 2ppm.

A10.167 We do not agree with EE's argument that the unbundled tariff is likely to result in greater consumer confusion and mistrust than the current regime. In fact, we expect that the unbundled tariff will improve consumer price awareness and understanding of non-geographic call charges and is likely to increase trust in the entire brand of non geographic numbers. We have set out in Section 4 and in Annex 8 the evidence of widespread consumer confusion about prices under the current system

[213] See paragraph 11.197 of the April 2012 consultation.

and the negative impacts this has on consumer confidence in using NGCs. Against this background, we expect that, over the long term, once consumers get familiarised with the new regime, the unbundled tariff is likely to lead to less consumer confusion and greater consumer trust. Our analysis and assessment of the benefits to consumer price awareness of the unbundled tariff are set out in detail in Section 8. On this basis we disagree with EE's view that we should account for additional ongoing direct and indirect costs on the wider NGC system associated with the unbundled tariff.

Updated estimates of misdialling costs

A10.168 As discussed above, we have revisited the way in which we estimated misdialling costs in the April 2012 consultation. In paragraph 11.197 of the April 2012 consultation we explained that we would use different call prices to estimate misdialling costs under each of the options considered:

- under geographic rating, we assumed a cost of 3.5ppm and 6.1ppm for fixed and mobile calls, respectively; and
- under the unbundled tariff, we assumed a cost of 4.9ppm and 18.1ppm for fixed and mobile calls, respectively.

A10.169 However, the misdialling cost estimates for geographic rating that we presented in Table 11.8 (reproduced above in Table A10.13) were calculated using the price of calls assumed for the unbundled tariff (i.e. 4.9ppm and 18.1ppm above) rather than those we assumed for geographic rating (i.e. 3.5ppm and 6.1ppm). This resulted in an overestimate of the misdialling costs under the geographic rating option.[214]

A10.170 Additionally, we agree with EE's comment that we should have accounted for 0845 and 0870 SPs that decide to get rid of their line completely in our estimates of misdialling costs. We consider that misdialling costs may occur if a consumer calls a number of an SP who decides to:

- run a number in parallel with a PCA when it:
    - o switches its line to another number it already has; or
    - o gets a new number and uses that instead; or
- get rid of its line and the TCP allocates the number to a different SP.

A10.171 In the April 2012 consultation we only considered the situation described in the first bullet point above. Instead, we agree with EE that calls to numbers of SPs who get rid of their line completely could also give rise to consumers' misdialling costs.

A10.172 We note however that in the case of SPs who get rid of the line, the extent to which these SPs' switching could result in misdialled costs will depend on how quickly TCPs' re-allocate their number to a different SP after switching. We would expect that TCPs would sterilise the line for a period of time[215] precisely to avoid misdialled calls to their SP clients. For simplicity we have accounted for these SPs in full when

[214] The correct misdialling costs should have been £1.0m under Scenario 1 (rather than £1.8m) and £0.6m under Scenario 2 (rather than £1.1m).
[215] We have some anecdotal evidence that TCPs typically wait between 3 to 6 months before re-allocating numbers (including both geographic and non-geographic).

estimating misdialled costs, however, we believe this may result in an overestimation of the true costs. We note that the share of 0845 and 0870 SPs whose reaction may result in misdialling costs is the same that we have presented in Table A10.6 above when assessing migration costs.

A10.173 We estimate the consumer misdialling costs of the unbundled tariff using the same assumptions we used in the April 2012 consultation (except in the case of the volumes of calls, as discussed below), namely:

- we use the percentage of SPs whose reaction is likely to result in misdialling costs (the same as in the case of migration costs, shown in Table A10.6 above);

- the volume of calls to 0845 and 0870 numbers that we used in the April 2012 consultation, that is, 2.0bn 0845 calls and 0.6bn 0870 calls in 2009. [216] However, we decrease these volumes by 10% annually (our base case assumption in Annex 11), and over a 5 years period, to reflect the expected volumes by the date of implementation of our decision in late-2014 (i.e. a 41% decline in volumes with respect to 2009);

- that 10% of calls are misdialled during the first year after the SP migrates or gets rid of the line, as we assumed in the April 2012 consultation;[217]

- that the average call duration is one minute.[218]

A10.174 In Table A10.14 below we update our estimate of misdialling costs amending the error we made in the April 2012 consultation, addressing EE's comment about including SPs that get rid of their line completely and reflecting the expected volumes by late-2014. We present both the updated cost estimates and our estimates in the April 2012 consultation to facilitate the comparison between the two. The reduction in our estimates of misdialling costs since the April 2012 consultation reflects the fact that we have reduced the volume of calls to 0845 and 0870 numbers to account for the expected volumes by the date of implementation of the unbundled tariff in late-2014.

[216] See paragraph A12.83 of the April 2012 consultation.
[217] See paragraph A12.84 of the April 2012 consultation.
[218] See paragraph 11.197 of the April 2012 consultation.

Table A10.14: Misdialling costs for 0845 and 0870 (£m)

	Option 1 (geographic rating)		Option 2 (the unbundled tariff)	
	April 2012 consultation	Updated	April 2012 consultation	Updated
Scenario 1	£1.8m	£1.0m	£3.6m	£3.1m
Scenario 2	£1.1m	£0.5m	£1.8m	£1.6m

Estimation of consumer time cost resulting from the unbundled tariff

A10.175 We have further explored EE's suggestion that our misdialling costs should have accounted for the consumer time cost involved in misdialling the incorrect number and redialling the correct one. For this we have estimated two costs:

- the consumer time cost of misdialling the incorrect number; and
- the consumer time cost of redialling the correct one.

A10.176 In the case of the consumer time cost of misdialling the incorrect number, we have estimated these costs using the same assumptions as in the case of consumers' costs of misdialling 0845/0870 numbers described in paragraph A10.173 above. In addition, we have assumed that the value of consumers' time is £5.97 per hour (or £0.1 per minute).[219]

A10.177 In the case of consumer time costs involved in redialling the correct number, we note that it is difficult for us to assess the average time that consumers are likely to spend in order to find the new number of the SP they are trying to reach. However there are two factors that may significantly reduce this time:

- a significant proportion of SPs that switch to another number are likely to run more than one number in parallel or operate PCAs (as discussed above in the section on migration costs).[220] This means that a significant share of consumers that misdial are likely to receive the information on the new number of the SP they are trying to reach when they misdial; and
- most services provided on 0845 and 0870 numbers are not likely to require the consumer to make a call with immediate urgency meaning that most consumers misdialling could potentially wait until they have an internet access or other source of information where they can find out the correct number with no significant detriment to them.

A10.178 In light of this, we consider that the amount of time spent looking for the new number of the SP may vary considerably, depending, for example, on whether the

[219] This is the value of consumer time that we used in our 2012 consultation on switching fixed voice and broadband. For a more detailed description see paragraph A8.12, available at http://stakeholders.ofcom.org.uk/binaries/consultations/switching-fixed-voice-broadband/summary/condoc.pdf.

[220] We note that we have already accounted for these costs to SPs under the "telecommunications costs" described in our migration costs section.

SP was running a number in parallel with a PCA. We have no evidence on the average time that customers may spend finding the phone number of the SP they are trying to dial. We consider that this could also vary significantly depending on the SP (e.g. depending on the extent to which the SP advertises its contact numbers). If advertised, searching for a phone number can be relatively easy and quick (less than a minute) using a search engine such as, for example, Google. The amount of time spent searching is therefore also likely to depend on the ease of access to an internet connection. However, with the current levels of internet take-up in the UK both fixed and mobile (at around 80% of households)[221] most callers are likely to be able to access internet relatively easily. We have therefore assumed that after misdialling a number, consumers are likely to spend around two minutes on average to find the correct number and redial.

A10.179 In Table A10.15 below we present our estimates of consumer time cost involved in both misdialling and redialling numbers of migrating 0845 and 0870 SPs using the assumptions described above.

Table A10.15: Consumer time cost misdialling and redialling migrating 0845 and 0870 SPs (£m)

	Option 1 (geographic rating)	Option 2 (the unbundled tariff)
Scenario 1	£7.6m	£13.0m
Scenario 2	£4.0m	£7.0m

Conclusion on misdialling costs for 0845 and 0870 numbers

A10.180 In summary, we present below the total misdialling costs associated with the introduction of the unbundled tariff on 0845 and 0870 number ranges including both the misdialling costs and the consumer time costs associated with misdialling and redialling, as described above.

Table A10.16: Consumer time cost misdialling migrating 0845 and 0870 SPs (£m)

	Option 1 (geographic rating)			Option 2 (the unbundled tariff)		
	Misdialling	Consumer time	Total	Misdialling	Consumer time	Total
Scenario 1	£1.0m	£7.6m	£8.6m	£3.1m	£13.0m	£16.1m
Scenario 2	£0.5m	£4.0m	£4.6m	£1.6m	£7.0m	£8.6m

[221] See Figure 1.3 of the Communications Market Report, July 2012.

080 free-to-caller

Summary of our position in the April 2012 consultation

A10.181 We mistakenly mentioned in paragraph A12.85 of the April 2012 consultation that we had estimated misdialling costs faced by consumers as a result of SPs migrating away from 080 and we also asked for stakeholder views on our estimates of 080 misdialling costs in question 16.3 of our April 2012 consultation. However, we erroneously did not account for misdialling costs to 080 numbers in our estimates of migration costs included in Table 16.12 of the April 2012 consultation. We discuss this in more detail below.

Stakeholder comments

A10.182 EE stated that our question 16.3 asked for stakeholders' views on our assessment of misdialling costs resulting from the free-to-caller option. It noted, however, that these costs were not included in our analysis in section 16. It considered that this was a notable omission because, even in the case of a zero rated 080 call, there was a network cost and regardless of whether the call was charged or not there would be a cost to the consumer in terms of time lost in misdialling the incorrect number and re-dialling the correct one.[222]

Ofcom's response

A10.183 We acknowledge that we erroneously did not account for misdialling costs in the case of 080 numbers, as highlighted by EE.

A10.184 Below we have investigated further if we should account for misdialling costs and consumer time cost associated with misdialling in the case of 080 numbers. In the case of the unbundled tariff we have considered the following costs of misdialling:

- the costs incurred by SPs as a result of calls being made to numbers which they have migrated away from, following the introduction of the unbundled tariff; and
- the consumer time cost involved in misdialling the incorrect number and redialling the correct one.

A10.185 We discuss each of these in the case of 080 numbers below.

Costs to SPs of misdialled calls to 080 numbers

A10.186 In the case of 080 numbers, SPs will be responsible for paying origination charges (through their hosting charges) to fixed and mobile OCPs under the free-to-caller regime. Therefore, misdialled calls to 080 numbers from which SPs have migrated could potentially result in call charges being incurred by SPs (rather than call charges being incurred by callers) if, for example, SPs decide to maintain a recorded announcement on their former 080 number or if the 080 number is then re-allocated to another SP.

A10.187 In terms of the percentage of SPs whose reaction to zero rating may result in misdialled costs, we have adopted the same approach as in the case of the

[222] EE, April 2012 consultation response, p. 56.

unbundled tariff. [223] The proportion of 080 SPs whose reaction may result in misdialling costs is the same as shown in Table A10.10 above.

A10.188 Our estimates of misdialled costs to SPs are based on the following assumptions:

- we use the percentage of 080 SPs whose reaction is likely to result in misdialling costs shown in Table A10.10 above (this gives us two scenarios, a high migration scenario (where 36% of SPs migrate) and a low migration scenario (where 8% of SPs migrate) as described in paragraph A10.150 above);

- the volume of calls to 080 numbers that we used in the April 2012 consultation, that is, 1.8bn 080 calls in 2009.[224] However, we decrease these volumes by 10% annually (our base case assumption in Annex 11), and over a 5 year period, to reflect the expected volumes by the date of implementation of our decision in late-2014 (i.e. a 41% decline in volumes with respect to 2009);[225]

- that 10% of calls are misdialled during the first year after the SP migrates or gets rid of the line, as we assumed in the April 2012 consultation;[226]

- that the average call duration is one minute;[227]

- to estimate the charges incurred by SPs as a result of misdialled calls we have used the same assumptions underlying the 'High outpayment' and 'Low outpayment' scenarios that we have used in our estimates of migration costs (as discussed in paragraph A10.147 above). The average SP outpayments associated with these two scenarios are, namely:

    - High outpayment: 2.46ppm;

    - Low outpayment: 0.62ppm.

A10.189 In Table A10.17 below we present our estimate of the costs incurred by SPs as a result of misdialled calls to 080 numbers calculated using the assumptions discussed above.

Table A10.17: SPs' misdialling costs for 080 numbers using the wider IAR (£m)

	High outpayment	Low outpayment
High migration (36% of 080 SPs)	£0.9m	£0.2m
Low migration (8% of 080 SPs)	£0.2m	£0.1m

A10.190 As in the case of migration costs, we also estimate the misdialling costs resulting from origination payments within our Base case scenario range in Table A10.18

[223] As explained above, we have included SPs that (i) switched line to another number they already had; (ii) got a new number and use that instead; or (iii) got rid of their line completely.
[224] See paragraph A12.83 of the April 2012 consultation.
[225] We assume that calls from both business and residential customers are likely to be free, as discussed in Section 12.
[226] See paragraph A12.84 of the April 2012 consultation.
[227] See paragraph 11.197 of the April 2012 consultation.

below. In this case, the average SP outpayments consistent with our Base case scenario range, as further discussed in Section 12 are:

- o High outpayment: 1.5ppm;
- o Low outpayment: 1.0ppm.

A10.191 This results in a low and high migration scenario with, respectively, 8% and 19% of SPs migrating away from 080. The misdialling costs associated with these assumptions are estimated in Table A10.18 below.

Table A10.18: SPs' misdialling costs for 080 numbers using the Base case scenario range (£m)

	High outpayment	Low outpayment
High migration (19% of 080 SPs)	£0.3m	£0.2m
Low migration (8% of 080 SPs)	£0.1m	£0.1m

A10.192 We consider however that there are two reasons why 080 numbers may differ from 0845 and 0870 numbers and therefore why misdialling costs calculated in this way may overestimate to a larger extent the true misdialling costs, namely:

- The main reason why SPs will migrate away from the 080 range is likely to be to avoid paying the higher origination charges resulting from a decision to make it free–to-caller. Consequently, SPs are less likely to run a recorded announcement on their former 080 number in parallel to the new number which they will migrate to, or are likely to do it for a shorter period of time than for a 0845/0870 number, in order to avoid paying the higher origination charges.

- Given that SPs will be responsible for paying call origination charges, they are likely to be less willing to receive calls from customers that have wrongly dialled their number. This means that, to avoid this happening, when an SP migrates away from the 080 range, TCPs are likely to leave a period of time before they re-allocate the 080 number to another SP (to a larger extent than on 0845/0870 numbers, where the calling party pays). By doing this TCPs can, on the one hand, ensure that callers will have had sufficient time to know that the SP they are willing to reach has changed number, so that they do not wrongly call the new SP on that number. On the other hand, they make sure that their SPs only pay for calls from customers that are truly willing to call them.

A10.193 We consider that both these factors mean that the costs of misdialling are likely to be significantly reduced in the case of 080 numbers. In this case, when a caller wrongly dials a 080 number it is less likely that the call will be connected through and therefore there will be no network costs associated with these calls and no corresponding recharge of these costs to a caller or SP. For this reason, we consider that the above misdialling costs are likely to significantly overestimate the true misdialling costs to SPs.

A10.194 As we erroneously did not account for misdialling costs in the April 2012 consultation, it is appropriate to give the opportunity to stakeholders to comment on our estimates:

Q10.2: Do you agree with our estimates of the level of misdialling costs for calls to service providers who may migrate as a result of making 080 free-to-caller? If not please explain why and provide evidence.

Consumer time cost of misdialling 080 numbers

A10.195 We have considered further the potential for consumer time costs involved in misdialling 080 numbers. As for the unbundled tariff, we consider that there are two types of consumer time costs associated with misdialling a number, in particular:

- the consumer time cost of misdialling the incorrect number; and
- the consumer time cost of redialling the correct one.

A10.196 In relation to the first type of consumer time cost, we have estimated these costs using the same assumptions as in the case of 0845/0870 numbers (described in paragraph A10.176 above). We have similarly assumed that the value of consumers' time is £5.97 per hour (or £0.1 per minute).[228]

A10.197 In the case of the second type of consumer time cost, we note again that it is difficult for us to assess the average time that consumers are likely to spend in order to find the new number of the SP they are trying to reach. Contrary to the case with 0845 and 0870 numbers, SPs migrating away from 080 numbers are less likely to run PCAs informing callers of their new numbers (for the reasons described in paragraph A10.192 above). Hence, we have considered that the average time spent by consumers to find the correct number after misdialling a 080 number should be slightly above the two minutes considered for 0845 and 0870 numbers, that is, approximately three minutes.

A10.198 In Table A10.19 below we present our estimates of consumer time cost involved in both misdialling and redialling numbers of migrating 080 SPs using the assumptions described above.

Table A10.19: Consumer time cost misdialling and redialling migrating 080 SPs using the wider IAR (£m)

	Cost
High migration (36% of 080 SPs)	£14.6m
Low migration (8% of 080 SPs)	£3.2m

A10.199 In addition, we estimate the consumer time cost associated with origination payments within the Base case scenario range in Table A10.20 below.

[228] This is the value of consumer time that we used in our 2012 consultation on switching fixed voice and broadband. For a more detailed description see paragraph A8.12, available at http://stakeholders.ofcom.org.uk/binaries/consultations/switching-fixed-voice-broadband/summary/condoc.pdf.

Table A10.20: Consumer time cost misdialling and redialling migrating 080 SPs using the Base case scenario range (£m)

	Cost
High migration (19% of 080 SPs)	£7.7m
Low migration (8% of 080 SPs)	£3.2m

A10.200 In light of the changes to our approach in estimating consumer time costs associated with making 080 free-to-caller, we believe it is appropriate to give the opportunity to stakeholders to comment on these:

Q10.3: Do you agree with our estimates of the level of consumer time costs as a result of making 080 free-to-caller? If not please explain why and provide evidence.

Conclusion on misdialling costs for 080 numbers

A10.201 In summary, we present below the total misdialling costs associated with making the 080 range free-to-caller, including both the misdialling costs incurred by SPs and the consumer time costs associated with misdialling and redialling, as described above.

Table A10.21: Total costs of misdialling migrating 080 SPs using the wider IAR (£m)

	Misdialling		Consumer time cost	Total	
	High outpayment	Low outpayment		High outpayment	Low outpayment
High migration	£0.9m	£0.2m	£14.6m	£15.5m	£14.8m
Low migration	£0.2m	£0.1m	£3.2m	£3.4m	£3.3m

A10.202 Our estimate of the costs using the Base case scenario range are summarised in Table A10.22 below.

Table A10.22: Total costs of misdialling migrating 080 SPs using the Base case scenario range (£m)

	Misdialling		Consumer time cost	Total	
	High outpayment	Low outpayment		High outpayment	Low outpayment
High migration	£0.3m	£0.2m	£7.7m	£8.0m	£7.9m
Low migration	£0.1m	£0.1m	£3.2m	£3.4m	£3.3m

Communication costs

Unbundled tariff

Summary of our position in the April 2012 consultation

A10.203 We said that the unbundled tariff would result in two types of communications costs:

- OCPs communicating with callers; and
- TCPs communicating with SPs.

A10.204 In addition, we noted that we were considering more specific advertising campaigns and targeted messages in parallel to industry's communication effort. We discussed each of these in turn.

OCPs communicating with callers

A10.205 We noted that stakeholders had told us that the 18 month implementation period would help them mitigate the costs of communicating with callers, in particular because they could run any communication relating to the unbundled tariff in parallel with other business as usual communication. We said there were mainly two sources of costs falling into this category, namely:

- extra call volumes handled by call centres; and
- the costs of creating additional printed material.

A10.206 We used [✂]'s estimate of additional call centre costs and scaled it up to obtain the industry's cost estimate of £0.4m. In the case of additional printed material, [✂] had estimated a cost of zero whereas using [✂]'s estimated cost of [✂] we calculated an upper bound cost of £2.3m for the industry.

A10.207 Therefore, we estimated a total industry cost of communicating with callers of between £0.4m and £2.7m.[229]

[229] See paragraphs 13.17 to 13.26 of the April 2012 consultation.

TCPs communicating with SPs

A10.208 We estimated industry costs of TCP to SP communication by scaling the estimates provided by [✂] to arrive at a range of £3.6m to £4.8m. We considered that this could overestimate the actual costs of communication, given that these TCPs tended to provide hosting for relatively large SPs and informing larger SPs could be more costly. However, we contrasted this information with that provided by [✂] and we concluded that our range was reasonable.[230]

Ofcom consumer communications campaign

A10.209 In the April 2012 consultation we said we saw benefits to consumers in a co-ordinated communications strategy by CPs, the media and Ofcom. [231]

A10.210 We set out the communications activities that we considered Ofcom could carry out and we also noted that we were considering more specific advertising campaigns and targeted messages to ensure consumers were made aware of the changes. We did not assess the likely costs associated with this activity given that we noted we intended to develop more specific proposals.[232]

Stakeholder comments

A10.211 Some stakeholders agreed with Ofcom's estimates of communications costs. BT said Ofcom's estimates seemed reasonable, assuming one price point for 0845 and one for 0870.[233] CWW said it was satisfied that the depiction of TCP costs to be incurred through communication with SP customers accurately reflected the information which it had supplied to Ofcom and was therefore an appropriate estimate. It said it believed that Ofcom would have been equally diligent in terms of the OCPs' costs and that those estimates were a reasonable proxy for the final costs. [234] Vodafone said it was difficult to calibrate the likely level of its costs as an OCP with any precision at this stage. However, it said that unless Ofcom introduced specific onerous obligations on OCPs it did not think the costs needed to be large and would mainly be one-off.[235]

A10.212 Surgery Line said, however, that communicating with its customer base of over 1,000 surgeries would require an extensive educational campaign and require significant staff time to articulate that information. It said the costs were difficult to quantify without the proposals being clear.[236]

A10.213 There was also concern from some stakeholders that Ofcom may have underestimated the likely communications costs. [✂] said it appeared that the value chain beyond the major networks had yet to comprehend the scale and impact of the proposals, which might indicate that communication costs had been understated and the readiness of industry generally to meet the proposed timetables had been overstated.[237]

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[230] See paragraphs 13.27 to 13.35 of the April 2012 consultation.
[231] See paragraphs 12.89 to 12.92 of the April 2012 consultation.
[232] See paragraphs 12.86 to 12.92 of the April 2012 consultation.
[233] BT, April 2012 consultation response, p.26.
[234] CWW, April 2012 consultation response, p.29.
[235] Vodafone, April 2012 consultation response, p.33.
[236] SurgeryLine, April 2012 consultation response, p.8.
[237] [✂]

A10.214 DWP said it would incur communications costs in complying with the Ofcom requirement to advertise the SC applicable to its numbers. It said that further details would be required regarding the precise nature of the requirement in order to assess those costs, for example it said it was not clear whether the requirement to advertise the SC covered in line messaging (i.e. messages in line with the SC being advertised) as well as printed materials and online information.[238]

A10.215 Three calculated that assuming its market share was [✂] and allocating Ofcom's industry cost estimate pro rata, Ofcom's estimate of Three's costs was [✂]. It said based on its past experience of communicating price changes to customers, it estimated its costs to be [✂]. This suggested that Ofcom had potentially underestimated the costs to OCPs by up to [✂]. However, it noted that even at that increased cost, the cost benefit analysis would remain positive.[239]

A10.216 EE raised a number of issues in its response on communications costs. It set out a list of the steps it would need to take in communicating the changes to its customers and said that whilst a minimum 18 month time frame was necessary to ensure that all of those steps could be completed in time, such a lead time was not a panacea which suddenly eliminated all communications costs. It mentioned as an example, that changes to contract terms, customer information forms and price guides would obviously need to be notified to customers only shortly before the launch of the unbundled tariff, when the changes actually took effect. EE said it could not be assumed that any other business as usual contract changes would be scheduled to be made at that point in time.[240]

A10.217 Therefore EE considered that the need to make the changes associated with the unbundled tariff was likely to involve a material incremental cost to OCPs. It also highlighted that any mass communications campaign to explain the unbundled tariff to consumers might well be run as a standalone piece, rather than being combined with other communications, given the complexity of the concept and the need for discrete marketing (for example, to make the message understood and absorbed by customers with limited time/attention spans). EE therefore believed that an incremental cost of zero for such communications was highly unlikely and that Ofcom's industry wide estimate of the initial costs to OCPs of communicating with callers about the introduction of the unbundled tariff was a very material underestimate.[241]

A10.218 Furthermore, EE said it was quite surprised that Ofcom had not factored in any annual communications cost to OCPs in relation to the implementation of the unbundled tariff. It said this was an obvious omission, given that:

- unbundling of call charges was a novel concept in the UK and it was not a simple concept to explain or understand, even for educated and intelligent consumers, let alone the less educated and vulnerable ones;

- the UK telecommunications market was a dynamic one, with significant numbers of customers both switching OCPs and entering the market for the first time every day; and

[238] DWP, April 2012 consultation response, Q13.3.
[239] Three, April 2012 consultation response, p.20.
[240] EE, April 2012 consultation response, pp. 38-39.
[241] EE, April 2012 consultation response, p.39.

- there would be without doubt an ongoing cost to OCPs to explain the unbundled tariff to its new customers.

A10.219 EE also argued that there was little doubt that the two-part structure of the unbundled tariff would drive additional calls from customers about their bills into OCP call centres, and that calls to deal with those pricing queries would take longer than they did currently due to the need to explain the structure (and in particular the OCPs' lack of control over the SC element of the call). EE noted that in Ofcom's recent consultation on consumer switching, Ofcom estimated that an increase in the length of a switching call by five minutes together with an increase in the online switching verification process of one minute would involve an overall cost to consumers of approximately £3.5m per year. It said that Ofcom should conduct a similar analysis in respect of the likely annual cost of additional consumer and OCP (and potentially SP) time spent on billing queries as a result of the unbundled tariff.[242]

A10.220 EE also noted that there were likely to be additional indirect costs related to those increased call centre queries, such as opportunity costs for the OCP of not being able to handle calls related to other matters, and cost to the customer such as deciding to disconnect before reaching a customer sales representative due to increased call waiting times (resulting in an overall bad customer experience and possible churn risk).

A10.221 Finally, EE mentioned that our communications cost estimates accounted for the costs to TCPs of communications and negotiations with SPs regarding the changes to their pre-existing commercial arrangements, but we had not accounted for any costs to SPs in this regard. EE considered that SPs may be expected to incur time and money costs in responding to TCP communications and that we should have included these in our impact assessment.[243]

Ofcom's response

A10.222 The issues raised by stakeholders can be grouped into the following categories:

- comments from stakeholders indicating that our estimates could be an underestimate of the true communications costs, although with no additional evidence provided;
- EE's criticism of our assumption that a long implementation period is likely to significantly reduce the costs of the unbundled tariff;
- new evidence on costs of OCPs communicating with callers from [✂];
- EE's view that there will be ongoing communication costs between OCPs and callers associated with the unbundled tariff, including additional customer calls to call centres and consumer time costs; and
- EE's comment that we should have accounted for the costs to SPs of responding to the communications with TCPs.

A10.223 We reply to these comments in turn below.

[242] EE, April 2012 consultation response, pp.41-42.
[243] EE, April 2012 consultation response, p. 40.

A10.224 In reviewing the information on communications costs provided by stakeholders we have reconsidered the evidence provided by TCPs on their costs of communicating with their SPs (which we discussed in paragraphs 13.27 to 13.35 of the April 2012 consultation). We discuss this in more detail below.

A10.225 In addition, we provide some preliminary view of the likely costs of the Ofcom consumer communications campaign that we briefly discussed in the April 2012 consultation.

Comments on our communications cost estimates presented in the April 2012 consultation

A10.226 We acknowledge that some stakeholders, including [✂], DWP and Surgery Line have expressed their concerns that we may have underestimated the communications costs associated with the unbundled tariff. We note however that they have not provided any additional evidence that would allow us to refine our assessment of costs. We had already taken into account [✂]'s views on communications costs as part of our estimates set out in the April 2012 consultation, as this stakeholder provided its estimates at the time and we said that they were broadly in line with those of other stakeholders that we had used to estimate industry communications costs. We recognise that there are a number of different parties involved in the value chain of a non-geographic call and each of these parties will need to inform their customers of the changes (for example, resellers of non-geographic numbers). However, our estimates of the costs of communication for both OCPs and TCPs have been scaled up to take account of the number of customer connections and non-geographic call minutes, therefore we consider this is sufficient to cover all the different parties in the value-chain.

The impact of the long implementation period on communications costs

A10.227 In terms of EE's comment that a long implementation period will not eliminate all communications costs, we disagree that this is an accurate reflection of our position in the April 2012 consultation. We consider that some (not all) of the communications costs associated with the unbundled tariff are likely to be significantly reduced by CPs' ability to run these communications campaigns in parallel to other business as usual activities. We note that this is in line with the view of the majority of stakeholders, who have confirmed that a long implementation period such as the one we have adopted will be likely to materially reduce communications costs.[244] We note that our assumption that the incremental cost of additional printed material (to communicate with callers) could be as low as zero was based on the evidence provided by [✂] (several CPs, including mobile and fixed) and we believe our cost estimates should reflect this evidence. In any event, we consider that we have, at least to some extent, addressed EE's concerns below, where we have slightly increased our estimate of communications costs in light of the additional evidence presented to us by [✂].

New evidence on OCPs' communications costs with callers

A10.228 As highlighted above, we have received new evidence on communications costs from THA and [✂]. We discuss each of these in turn below.

[244] See our discussion of communications costs and the evidence provided by stakeholders in paragraphs 13.17 to 13.35 of the April 2012 consultation.

A10.229 In relation to [✂]'s new cost estimates, we present these alongside those provided by [✂] in the April 2012 consultation in Table A10.23 below.[245] [✂] (one CP) noted that [✂] and therefore, total communications costs could potentially be double those provided. To account for this we present [✂]'s (this CP) estimates in a range.

Table A10.23: Quantified communications costs of introducing the unbundled tariff

Cost item	[✂]	[✂]
Call centre costs	[✂]	[✂][246]
Other communications costs	[✂]	[✂][247]

A10.230 In relation to call centre costs, we note that there is some disparity in the figures provided by [✂] (one CP) and [✂] (one CP). We have decided to place more weight on the evidence provided by [✂] (one CP) for the following reasons:

- we consider that the disparity between the figures for call centre costs of [✂] (one CP) and [✂] (one CP) may be because in the case of the latter these relate to their [✂] campaign which, given its nature (i.e. a price increase), may have resulted in significant calls by customers to its call centres. In addition, the unbundled tariff will be promoted more widely and will apply across the industry. Therefore consumers will be informed through a number of different means. As a result we consider that it is less likely that it will generate a similar number of calls;

- [✂] (one CP) represents a significantly smaller share of calls to non-geographic numbers than [✂] (one CP); and

- there is a significant variation between the lower and upper bound of costs provided by [✂] (one CP), with the lower bound being broadly in line with the estimates provided by [✂] (one CP) (after taking into account the differences between the two in terms of customer base).

A10.231 We have nonetheless considered it appropriate to slightly increase our estimate of industry call centre costs from £0.4m to £0.5m to account for the new evidence provided by [✂] (one CP).[248]

A10.232 In terms of the other communications costs provided by [✂] (one CP), again these are slightly above those provided by [✂] (one CP) (if we take into account the scale of each CP). We note that [✂] (one CP) indicated that it expected to substantially decrease its communications costs if a sufficiently long lead time was allowed;[249] whereas [✂] (one CP) has told us that it was difficult to predict whether other campaigns could be run in parallel to that for the unbundled tariff 18 months in advance. We have therefore increased the upper bound of the communications costs we presented in the April 2012 consultation for this item from £2.3m to £6.1m[250] to account for this new evidence. [✂]. We believe it is also likely to

[245] [✂].
[246] [✂].
[247] [✂].
[248] This results from assuming that [✂].
[249] See paragraph 13.20 of the April 2012 consultation.
[250] The £6.1m results from scaling up the [✂].

address, at least to some extent, EE's view that we may have underestimated the communications costs associated with the unbundled tariff.

A10.233 We note however that we remain of the view that the long implementation period that we will be adopting, as well as the fact that changes will be communicated through different means at the same time, is likely to significantly reduce communications costs. We therefore consider that our updated estimate is likely to overestimate the true communication costs of the unbundled tariff.

A10.234 We note however that, as discussed further below in paragraphs A10.263 to A10.267, we have now decided to split the communications costs that are relevant to both the unbundled tariff and making the 080 range free-to-caller equally between the two changes. This means that the £6.1m communications costs allocated to the unbundled tariff should now be split in half between the unbundled tariff (£3.05m) and making the 080 range free-to-caller (£3.05m). We do not consider that other communications costs are relevant for the 080 range as discussed further below.

Annual communications costs, calls to call centres and consumer time costs

A10.235 As highlighted above, EE considers that our communications costs should include an allowance for ongoing costs to OCPs of explaining the unbundled tariff to their customers, as well as additional calls to call centres on an ongoing basis. To be clear, we have recognised that the introduction of the unbundled tariff will require OCPs and TCPs to communicate the changes to their customers over a period of transition between the current regime and the new regime. For this reason we have accounted for one-off costs of communications campaigns, as well as one-off costs of additional calls to call centres, in our estimates of communications costs (discussed above).

A10.236 However, we consider that over the long term, the unbundled tariff will result in a simplification of the regime applying to non-geographic calls, and this should reduce OCPs' annual communications costs, as well as the number of calls to call centres made by OCPs' customers, relative to the current regime.

A10.237 We disagree with EE that OCPs will need to incur significant ongoing costs to explain the unbundled tariff to (i) new customers switching from a previous OCP or (ii) new customers who use telecommunications service for the first time. In the first case, it is likely that the previous OCP would have already explained the unbundled tariff to the customer switching to a new OCP. In the second case, we consider (as discussed above) that the unbundled tariff will result in a reduction of ongoing costs compared to the status quo. Therefore it is likely to result in a reduction, rather than increase in ongoing costs. We therefore disagree that we should increase our estimates of communications costs to account for ongoing communications costs, as suggested by EE.

A10.238 In order to be consistent with our treatment of misdialling costs (described in paragraphs A10.175 to A10.179 above), we have however accounted for the consumer time cost of making additional calls to call centres relating to the unbundled tariff. For this, we have used the data from [✂] (one CP) that we used in the April 2012 consultation. [✂]. We have estimated the additional time cost to consumers using:

- an estimate of total industry incremental calls to call centres associated with the unbundled tariff of 135,000 calls (based on the information provided by [✂] (one CP));
- an average duration of calls to call centres of 8.8 minutes (the average of the 10.6 minutes provided by [✂] [251] and 7 minutes provided by [✂][252]); and
- a consumer time value of £5.97 per hour (as previously discussed in paragraph A10.196 above).

A10.239 Using the above, we estimate a total consumer time cost of £118.2K. We disagree however with EE's suggestion that we should increase the duration of calls to call centres to account for the fact that the unbundled tariff is likely to increase the average duration of calls to call centres. We do not consider that the nature of the questions that are likely to arise in relation to the unbundled tariff are likely to be more complex than those relating to other billing issues currently, and EE has provided no evidence showing why this should be the case.

Costs of SPs communicating with TCPs

A10.240 EE said that while we had accounted for the costs of TCPs communicating with SPs, we had wrongly omitted from our analysis the costs of SPs responding to these communications.

A10.241 We disagree that there will be any significant costs to SPs of communicating with TCPs, for the following reasons. Firstly, there is not necessarily any requirement on SPs to respond directly to, or engage in correspondence with its TCP. The TCP will inform the SP of its SC for its non-geographic number and it is only where the SP has any queries about that process or wants to consider alternative options that it needs to engage directly with its TCP.

A10.242 Second, we consider that the reason why TCPs will face an incremental cost of communicating the changes relating to the unbundled tariff to their SPs is because they tend to manage a large portfolio of SPs. This means that they will need to allow for sufficient capacity (e.g. in terms of staff time) to meet and/or to send letters and leaflets to a significant number of SPs. To deal with this, TCPs may need to employ additional staff (incurring a monetary cost) or, if they do not employ additional staff, may require postponing other scheduled activities (incurring an opportunity cost).

A10.243 In contrast, SPs are unlikely to require the same level of effort and resources to communicate with their TCP. To start with, most are likely to need to communicate with just one hosting provider. Additionally, we consider that the majority of SPs will remain on SCs that are similar to the current termination rates without the need to migrate, as discussed further in Annex 21, which is likely to reduce their need to communicate with TCPs. For this reason we believe that most SPs are likely to deal with any communications relating to the unbundled tariff as business as usual, with no need to employ additional staff or postpone other tasks. We consider that there may be a minority of SPs, for example those migrating to a different price point, that could engage in negotiations that resulted in costs outside business as usual. We

[251] This figure may be an overestimate of the average time because this OCP said that it tried to fulfil as many queries as possible via selfservice through its online portal. It said that as many queries were resolved in that way, the remaining queries tended to be more complex. [✂].

[252] [✂]

nonetheless consider that the costs of SPs communicating with TCPs are unlikely to be material and, for this reason, we have not increased our communications costs to account for these SP costs.

Revision of the costs of TCPs communicating with SPs that we reported in the April 2012 consultation

A10.244 In the April 2012 consultation we reported the TCP to SP communications costs that were likely to result from the unbundled tariff.[253] Since then, in reviewing this information it is clear that the information provided by TCPs reflected the costs of communicating changes to their entire base of SPs, that is, including SPs in unbundled *and* the 080 number ranges.[254] In particular, TCPs provided to us estimates of costs of:

- contacting each SP to advise of changes to charges applicable to them;
- managing any negotiation process with SPs over these charges; and
- updating contracts or any other administrative requirement.

A10.245 The figures provided related to costs such as:

- staff costs;
- materials (e.g. mailshots to explain the changes);
- costs of making changes to contracts; and
- any other relevant costs not included above.

A10.246 In light of this, we consider that it would be more appropriate to split the communications costs that we reported in the April 2012 consultation between the unbundled tariff and making the 080 range free-to-caller. In the case of OCP communications with callers we have decided to split these costs in half between the unbundled tariff and free-to-caller (as discussed above in paragraph A10.234), as we do not have any more suitable criteria to disaggregate these costs between the two policies.[255] In the case of TCP communications with SPs, however, we have considered it more appropriate to use information on the number of SPs on the 080 and the unbundled tariff ranges from [✂] (one CP) and [✂] (one CP), as shown in Table A10.24 below.

[253] See paragraphs 13.27 to 13.35 of the April 2012 consultation.
[254] We consider that the cost estimates provided by CPs may include costs relating to communicating with SPs on the 0500 range. This may result in an overestimate of the communications costs between TCPs and 080 SPs, although we do not consider it should be material (due to the relatively low number of SPs on 0500).
[255] Arguably, the communications costs associated with the unbundled tariff could be higher than those of 080, given that the message that needs to be communicated to callers is relatively more complex in the case of the former. For example, OCPs would need to explain that there will be two tariffs (the AC and the SC) in the case of the unbundled tariff, whereas for 080 they will only need to indicate that calls to these numbers will be free. However, CPs did not provide a disaggregation of their expected communications costs for each of unbundling and 080.

Table A10.24: Number of SPs on different non-geographic number ranges

	080	Unbundled tariff
[✂]	[✂]	[✂]
Percentage	[✂]	[✂]
[✂]	[✂]	[✂][256]
Percentage	[✂]	[✂]
Average percentage	58%	42%

A10.247 This means that 58% of the communications costs estimated in the April 2012 consultation should be allocated to making the 080 range free-to-caller, and 42% to the unbundled tariff. Using this approach, we estimate that the communications costs of the unbundled tariff are likely to be around £1.5m to £2.0m (compared to the costs of £3.6m to £4.8m reported in the April 2012 consultation). We discuss below the impact of these changes on the communications costs of making the 080 range free-to-caller in paragraph A10.262 below.

A10.248 In addition, we note that the communications costs provided in the April 2012 consultation are likely to be an overestimate of the true costs for the unbundled tariff. As described above, our estimates include costs relating to updating contracts and negotiating new charges with all SPs. We believe this is unlikely to be the case for many SPs on unbundled tariff numbers, where we expect that TCPs will try to minimise any changes to the hosting charges paid currently by SPs to reduce the impact of the introduction of the unbundled tariff on SPs.

Ofcom consumer communications campaign

A10.249 Since the April 2012 consultation we have further considered potential options for any public information campaign that we could run in parallel to the industry's communications effort. We have obtained indicative cost estimates for the activities we proposed in the April 2012 consultation.[257] Our current preliminary estimates indicate a campaign cost for Ofcom of £420K, for a campaign running in press, online and on printed material for telephone users.

A10.250 We believe a campaign spend at this level is proportionate to the importance of the non-geographic changes to consumers, as well as being consistent with current public-spending expectations and the challenging economic climate.

A10.251 We note that this communications campaign will be run for the benefit of both the unbundled tariff and free-to-caller decisions. As we do not have any more suitable criteria to split the cost between the two decisions, we have decided to split the total cost equally between the two. This means that the cost for the unbundled tariff will be around £210K.

[256] [✂] only includes 0845 and 0870 SPs.
[257] April 2012 consultation, paragraphs 12.89 to 12.92.

Conclusion on communications costs resulting from the unbundled tariff

A10.252 In light of the above, we present in Table A10.25 below the updated estimates of communications costs resulting from the introduction of the unbundled tariff, and we compare these with our estimates in the April 2012 consultation.

Table A10.25: Communications costs resulting from the unbundled tariff

	One-off communications costs[258]	
	April 2012 consultation	Updated
OCP communication with callers	£0.4 to £2.7m	£0.6m to £3.7m
- call centres	£0.4m	£0.5m
- other communications costs	£0 to £2.3m	£0 to £3.1m
- consumer time costs (calls to call centres)	N/a	£0.1m
TCP communication with SPs	£3.6m to £4.8m[259]	£1.5m to £2.0m[260]
Ofcom communications campaign	N/a	£0.2m
TOTAL	£4.0m to £7.5m	£2.4m to £5.9m

080 free-to-caller

Summary of our position in the April 2012 consultation

A10.253 In the April 2012 consultation we did not estimate the communications costs associated with making the 080 range free-to-caller. On the one hand, we considered that these costs would be incorporated as part of the more general communications activity associated with the unbundled tariff, particularly given the simplicity of the "free-to-caller" message.[261] On the other hand, as in the case of the unbundled tariff, we did not know the exact costs of the communications campaign that we were proposing to run alongside the implementation of the changes proposed under the unbundled tariff.[262]

[258] As discussed above, we did not consider any annual communications costs in the April 2012 consultation, and we remain of the view that this is appropriate.
[259] As reported in the April 2012 consultation.
[260] After allocating 58% of the costs reported in the April 2012 consultation to free-to-caller and 42% to the unbundled tariff, as discussed in paragraph A10.247 above.
[261] See paragraphs 17.107 to 17.113 of the April 2012 consultation.
[262] See for example Section 1, 6 and 16 of the April 2012 consultation.

Stakeholder comments

A10.254 For the reasons just discussed, we did not invite any comments from stakeholders on this issue, and we did not receive any comments. We note however that some comments made in relation to the unbundled tariff (e.g. those relating to the impact of the long implementation period on the costs of the unbundled tariff) are equally relevant for the 080 range.

Ofcom's response

A10.255 In the April 2012 consultation we did not assess in detail the potential communications costs associated with making the 080 range free-to-caller. We nonetheless listed some of these costs when discussing the steps that were likely to be required to implement our proposals.[263] Based on this, and on stakeholder comments on our estimation of communications costs for the unbundled tariff, we have attempted to quantify the communications costs associated with making the 080 range free-to-caller on a similar basis.

A10.256 We consider that the following communications costs are likely to be relevant in the case of 080:

- communications between TCPs and OCPs;
- communications between TCPs and SPs;
- communications between OCPs and callers; and
- Ofcom's consumer communications campaign.

A10.257 We look into each of these categories of costs in turn below.

Communications between TCPs and OCPs

A10.258 We believe this would involve the following categories of communications costs:

- an initial notification by the TCP of their proposed revision to origination charges to be given to OCPs with whom they have an existing interconnect agreement within a month of the wholesale access condition being set (see Section 14;
- bilateral negotiations between the TCP and OCPs to agree origination charges; and
- a final notification of changes to contracts after the origination charges have been determined.

A10.259 As discussed in Annex 30, we are proposing that TCPs should be required to notify their proposed revision to origination charges to OCPs with whom they have an existing interconnect agreement. After this, we expect that there will be a period of bilateral negotiations between TCPs and OCPs to agree the level of origination charges. In the event there is a failure of commercial negotiations, then a dispute may be brought to us. Once a rate is agreed or determined, we expect that there will be a final notification where the TCP will inform the OCP about the (final) origination charge that will apply between them.

[263] See paragraph 17.98 of the April 2012 consultation.

A10.260 We acknowledge that it is very challenging for us to quantify the communications costs that are likely to result from the process of notifying and agreeing origination charges. For this reason we have not accounted for these costs in our impact assessment. We note however that we expect that several factors are likely to reduce the costs involved, in particular, because:

- the way in which the interconnection market works means that there is likely to be a relatively small number of notifications as most TCPs only interconnect directly with BT and a small number of other CPs (e.g. TalkTalk, Virgin Media, CWW and Gamma). This will reduce the number of notifications significantly.[264]

- notification of charge changes is a standard and relatively frequent activity for CPs that interconnect directly or use transit operators, hence, we would expect that the notification of origination charge changes would to a large extent be run as a business as usual process;

- the fact that most TCPs are only likely to have to do a small number of notifications (e.g. just to BT), means that they are likely to be able to set up this process in the most efficient way possible; and

- the issuance of our guidance as to how we would approach any dispute about fair and reasonable origination charges is likely to assist CPs in the negotiation process, by narrowing the likely parameters of that negotiation.

A10.261 In light of the above, we consider that the costs of TCPs of communicating with OCPs are unlikely to be material, as these factors are likely to substantially reduce any costs involved in agreeing origination charges between TCPs and OCPs as a result of making the 080 range free-to-caller.

Communications between TCPs and SPs

A10.262 For the reasons discussed above in paragraphs A10.244 to A10.247 above, we consider that the costs of communications between TCPs and SPs that we reported in the April 2012 consultation should be split between the unbundled tariff and free-to-caller. We consider that 58% of that cost should be allocated to making the 080 range free-to-caller, meaning that TCP to SP communications costs for this are likely to be around £2.1m to £2.8m.

Communications between OCPs and callers

A10.263 In the April 2012 consultation we discussed the costs of OCPs communicating to their subscribers the changes associated with the unbundled tariff. These included costs relating to:

- call centre costs;

- printing material for notifying consumers; and

- changes to existing printed literature.

[264] As discussed in section 14, we are proposing that the access condition would apply as between OCPs and TCPs, but not between transit providers and TCPs. As such, TCPs would not be required to issue a notification in respect of traffic that they receive via a transit operator.

A10.264 We consider that the last two categories of communications costs (i.e. printed material and changes to printed literature) are also likely to arise in the case of making the 080 range free-to-caller. We believe that once OCPs will have to communicate the changes associated with the unbundled tariff, the incremental cost of doing the same for the 080 range are likely to be insignificant, as OCPs will be able to run both communications campaigns in parallel.

A10.265 However, given that OCPs are likely to implement both changes at the same time, we have decided that it is most appropriate for the purpose of our impact assessment to split the communications costs that are relevant to both changes in half between the unbundled tariff and the 080 range.

A10.266 We note however that we do not consider that some of the communications costs that we have calculated for the unbundled tariff are relevant in the case of 080. In particular, we do not consider that making the 080 range free-to-caller is likely to result in additional calls to call centres or costs to consumers in terms of time spent calling OCPs' call centres. This is because we do not expect that making 080 calls free will result in additional calls from callers to OCPs' call centres. For this reason we have assumed that there will be no additional costs of calls to call centres (either to OCPs or consumers) associated with our approach to 080. In fact, we consider that making 080 free-to-caller from mobiles is likely to result in cost savings to OCPs and consumers from a reduced number of calls to call centres, as we would expect that our approach will reduce calls from consumers associated with, for example, bill shock. Research published by Ofcom shows that calls to 08 numbers (including 080, 0845 and 0870) are responsible for the largest proportion of bill shock incidents relating to calls made outside of bundles on contract mobile phones and calls to 080 were the second highest response as the number range responsible for this bill shock (calls 0845 were the highest).[265] However, we have not accounted for these likely cost savings as it has been difficult for us to estimate these cost savings.

A10.267 In light of this, we use the same assumption that we used for the unbundled tariff's 'other communications costs' (see Table A10.25 above). We therefore estimate that there will be around £0 to £3.05m communications costs associated with making the 080 range free-to-caller.

Ofcom's consumer communications campaign

A10.268 As discussed above in paragraph A10.251, we note that this communications campaign will be run for the benefit of both the unbundled tariff and the free-to-caller changes. We have therefore decided to split the total cost equally between the two. This means that the cost for free-to-caller will be around £210K.

Conclusion on communications costs for the 080 range

A10.269 In Table A10.26 below we summarise the communications costs that are likely to be associated with making the 080 range free-to-caller.

[265] See Ofcom's publication regarding Unexpectedly High Bills, available at http://stakeholders.ofcom.org.uk/binaries/consultations/unexpectedly-high-bills/statement/report.pdf

Table A10.26: Communications costs resulting from making the 080 range free-to-caller

	One-off communications costs[266]
TCP communication with OCPs	Not material
OCP communication with callers	£0 to £3.05m
- call centres	None
- other communications costs	£0 to £3.05m[267]
- consumer time costs	None
TCP communication with SPs	£2.1m to £2.8m[268]
Ofcom communications campaign	£0.2m[269]
TOTAL	£2.3m to £6.0m

Other costs

Unbundled tariff

<u>Summary of our position in the April 2012 consultation</u>

A10.270 In the April 2012 consultation we mentioned other costs that were likely to result from the introduction of the unbundled tariff, including the:

- SC database; and
- compliance with the SC publication requirements.

A10.271 Although we did not attempt to estimate the costs associated with each of these, we received some comments from stakeholders relating to these costs, summarised below.

[266] As discussed above, we did not consider any annual communications costs in the April 2012 consultation, and we remain of the view that this is appropriate.
[267] These costs represent total communications costs split in half between the unbundled tariff and 080, as discussed above.
[268] After allocating 58% of the costs reported in the April 2012 consultation to free-to-caller and 42% to the unbundled tariff, as discussed in paragraph A10.247 above.
[269] These costs represent total communications costs split in half between the unbundled tariff and 080, as discussed above.

Stakeholder comments

A10.272 EE believed that there were a number of omissions in Ofcom's cost estimates. In particular, we had not taken into account the costs to SPs of complying with the obligations imposed by Ofcom to advertise their SC, to the extent that these obligations required SPs to (i) amend their existing advertisements/communications, or (ii) impose additional disclosure and publication obligations on SPs compared with those they have currently.

A10.273 EE also considered that our impact assessment did not include the costs of maintaining and establishing an accurate central source of information accessible to consumers, industry and regulators regarding the SCs. [270]

Ofcom's response

A10.274 In relation to EE's comment that we should take into account the costs of the SC database and the impact on SPs of our decision on the SC's publication requirements, we address these in turn below.

The SC database

A10.275 We have set out the approach we intend to take with regards to the SC database in Section 10 and in more detail in Annex 25. We will continue to publish information about non-geographic number blocks that we have allocated in our National Numbering Scheme together with the SC allocated to that number block.[271] We are not therefore imposing any requirement for the establishment of a database with additional functionality.

A10.276 In terms of updating the Numbering Scheme in order to provide information on SCs, our internal IT and publication services teams provisionally estimated that this would have a low up-front cost (approximately £8K), and that there would be no material additional ongoing cost to Ofcom, as it would be delivered on a business as usual basis.

The compliance with the SC publication requirements

A10.277 In relation to EE's comment that we should account for the costs to SPs of the SC publication requirements, we note that EE mentions two sources of costs:

- associated with amending their existing advertisements/communications; and
- related to the additional disclosure and publication obligations on SPs to those they have currently.

A10.278 In both cases, we note that there will be an 18 month implementation period. As discussed in the April 2012 consultation, advertising and promotional material tend to be replaced every year (with some exceptions of shorter and longer replacing cycles).[272] In these circumstances, we consider that there may still be costs associated with changes to advertising materials for SPs that migrate away from a number range, given that these SPs may have less flexibility in deciding when to

[270] EE, April 2012 consultation response, pp.39-41.
[271] http://stakeholders.ofcom.org.uk/telecoms/numbering/telephone-no-availability/numbers-administered/
[272] See paragraphs A12.39 to A12.40 of the April 2012 consultation.

migrate and make these changes (and we have considered these costs in our assessment of migration costs, discussed in Annex 12 of the April 2012 consultation and paragraphs A10.70 to A10.77 above). We consider however that those SPs that remain on the same number range, are less likely to incur any such costs because they are more likely to be able to run any update to their advertising material in parallel to their normal cycle of replacement of this material. We therefore remain of the view that these costs are unlikely to be material and therefore we have not accounted for them.

080 free-to-caller

Summary of our position in the April 2012 consultation

A10.279 In addition to the costs already discussed, we mentioned in the April 2012 consultation that making the 080 range free-to-caller would deliver potential cost savings because mobile OCPs would no longer be required to present a PCA for chargeable 080 calls.[273]

Stakeholder comments

A10.280 Only EE mentioned that we had not accounted for the cost of removing PCAs as a result of making 080 free-to-caller.[274] We did not receive any comments from stakeholders on this point.

Ofcom's response

A10.281 The Numbering Plan includes an obligation for 080 calls to be free, unless charges are notified to callers at the start of the call.[275] For this reason, mobile CPs, which charge for calls to some 080 numbers, include PCAs at the start of a call to these 080 numbers. A decision to make the 080 range free-to-caller will mean that mobile OCPs no longer have to provide a PCA at the start of the call. EE suggests that removing the PCA will result in a cost to mobile OCPs, however, we note that this cost is likely to be a small one-off cost and, instead, over time we consider that removing the PCA on most calls to 080 originated from mobile is likely to result in ongoing cost savings. However, It is difficult for us to estimate the cost savings associated with removing PCAs.

Summary of our cost assessment

Unbundled tariff

A10.282 In Table A10.27 below we compare our updated view of the costs of implementing the unbundled tariff with the cost estimates that we used in the April 2012 consultation.

[273] See paragraph 16.204 of the April 2012 consultation.
[274] EE, April 2012 consultation response, p. 44.
[275] See http://stakeholders.ofcom.org.uk/binaries/telecoms/numbering/numplan201210.pdf

Table A10.27: Quantified resource costs of introducing unbundled tariff

Cost item	April 2012 consultation		Updated	
	One off	Annual	One off	Annual
Billing costs	£60.8m to £64.8m	£1.8m to £5.8m	£11.2m to £35.1m	£1.4m to £7.4m
Migration costs	£1.3m to £10.9m	None	£3.4m to £15.8m	None
Misdialling costs	£1.8m to £3.6m	None	£1.6m to £3.1m	None
Consumer time cost - misdialling	N/a	N/a	£7.0m to £13.0m	None
OCP communication with callers	£0.4m to £2.7m	None	£0.6m to £3.7m	None
TCP communication with SPs	£3.6m to £4.8m	None	£1.5m to £2.0m	None
Ofcom communications campaign	N/a	N/a	£0.2m	None
SC database	N/a	N/a	£0m	None
TOTAL	£68.8m to £86.7m	£1.8m to £5.8m	£25.6m to £73.0m	£1.4m to £7.4m

A10.283 We recognise that there are some areas in which it has been difficult for us to quantify the costs of the unbundled tariff, or where we have considered that these costs were unlikely to be material, and as a result have not included these costs in our assessment namely:

- Migration costs of SPs on 0843/4, 0871/2/3 and 09: we do not consider that there will be any material migration of SPs from these number ranges and therefore we have not accounted for these costs in our estimates of migration costs (see paragraphs A10.105 to A10.113 above for a more detailed explanation);

- Costs of misdialling 0843/4, 0871/2/3 and 09 numbers: for the same reasons described in the case of migration costs, we have not accounted for misdialling costs associated with calls to these number ranges (see paragraph A10.165 above);

A10.284 In summary, we do not consider that any migration costs or costs of misdialling to these number ranges are likely to be material, as we do not expect that the unbundled tariff will result in any material migration of SPs on these number ranges, as discussed in more detail above. However, we recognise there may be some migration on these number ranges as a result of the unbundled tariff, and that our estimates of the associated costs may be understated as a result. We do not consider this is likely to have affected our overall findings as we do not consider these costs likely to be material.

A10.285 Conversely, there are areas in which we believe we have adopted a conservative approach in our estimation of the costs that are likely to result from the unbundled tariff, and we have tended to overestimate what we consider are likely to be the true costs of our approach. These include:

- Billing costs: our calculations take the estimates provided by CPs at face value and make no assessment of the efficiency of the billing systems currently used by CPs. We consider that this may overstate the true billing costs (see paragraphs A10.25 to A10.26 above).

- Migration costs: our approach is likely to overestimate the level of migration from 0870 SPs, as we inferred the behaviour of 0870 SPs from the information we have on 0845 SPs and this is likely to overestimate the true level of migration from 0870 SPs (as further discussed in paragraphs 11.171 to 11.173 of the April 2012 consultation). In addition, we have assumed that SPs that are likely to get rid of their line completely would incur the same level of migration costs than SPs migrating to another number range, which is likely to overstate migration costs (as explained in paragraph A10.122 above);

- Misdialling costs: we have similarly considered calls to SPs who get rid of their line completely, whereas we expect that TCPs are likely to sterilise these lines for a period of time after an SP would withdraw their number, reducing or even eliminating the possibility of a misdialled call to these numbers (as further discussed in paragraph A10.172); and

- Communications costs between TCPs and SPs: the estimates provided by stakeholders, which we have used in deriving our cost figures, include costs relating to updating contracts and negotiating new charges with SPs on unbundled tariff numbers. We consider instead that TCPs are likely to minimise changes to hosting charges and changes to contracts with SPs on unbundled number ranges may not be required (as explained in more detail in paragraph A10.248).

080 free-to-caller

A10.286 In Table A10.28 below we compare our updated view of the costs of making the 080 range free-to-caller with the cost estimates that we used in the April 2012 consultation.

Table A10.28: Quantified resource costs of making the 080 range free-to-caller using the wider IAR

Cost item	April 2012 consultation		Updated	
	One off	Annual	One off	Annual
Billing costs	None	None	Not material	Not material
Multiple origination charges	None	None	Not material	Not material
Migration costs	£2.6m to £11.4m	None	£3.2m to £36.0m	None
Misdialling costs	N/a	N/a	£0.1m to £0.9m	None
Consumer time cost - misdialling	N/a	N/a	£3.2m to £14.6m	None
TCP communication with OCPs	N/a	N/a	Not material	Not material
TCP communication with SPs	N/a	N/a	£2.1m to £2.8m	None
OCP communication with callers	N/a	N/a	£0 to £3.1m	N/a
Consumer time cost - communications	N/a	N/a	None	None
Ofcom communications campaign	N/a	N/a	£0.2m	None
TOTAL	£2.6m to £11.4m	None	£8.8m to £57.5m	None

A10.287 Our estimated costs of making 080 free-to-caller when we only consider origination payments within the Base case scenario range are shown in Table A10.29 below.

Table A10.29: Quantified resource costs of making the 080 range free-to-caller using the Base case scenario range

Cost item	April 2012 consultation		Updated	
	One off	Annual	One off	Annual
Billing costs	None	None	Not material	Not material
Multiple origination charges	None	None	Not material	Not material
Migration costs	£2.6m to £11.4m	None	£3.2m to £19.0m	None
Misdialling costs	N/a	N/a	£0.1m to £0.3m	None
Consumer time cost - misdialling	N/a	N/a	£3.2m to £7.7m	None
TCP communication with OCPs	N/a	N/a	Not material	Not material
TCP communication with SPs	N/a	N/a	£2.1m to £2.8m	None
OCP communication with callers	N/a	N/a	£0 to £3.1m	N/a
Consumer time cost - communications	N/a	N/a	None	None
Ofcom communications campaign	N/a	N/a	£0.2m	None
TOTAL	£2.6m to £11.4m	None	£8.8m to £33.0m	None

A10.288 As in the case of the unbundled tariff, we recognise that there are some areas in which it has been difficult for us to quantify the costs of the unbundled tariff, or where we have considered that these costs were unlikely to be material, and we therefore have not included them in our assessment namely:

- Communications between TCPs and OCPs: it has been very challenging to estimate these costs. We note however that several factors are likely to substantially reduce these costs. For this reason, we do not think they are likely to be material (A10.258 to A10.261) or, as a result, to have any impact on our overall conclusions.

A10.289 Conversely, in some areas we have tended to overestimate the likely costs associated with making 080 free-to-caller, namely:

- Migration costs: we have assumed that the entire share of SPs that responded that they would withdraw their 080 number would migrate to another number range, whereas some are likely to use alternative measures to mitigate the increase in the cost of calls from mobile or get rid of their line completely (see the discussion in paragraph A10.149). In addition, when determining the percentage of SPs migrating that is associated with different increases in hosting charges in our 2011 SP survey, we have tended to adopt conservative assumptions that are likely to result in some overestimation of the migration costs (as further discussed in paragraph A10.150);

- Misdialling costs: our estimates are likely to be an overestimate because we have not accounted for the fact that, in the case of 080 numbers, SPs are less likely to run recorded announcements and TCPs are more likely to sterilise the line to avoid the SP being charged for unwanted calls (see the discussion in paragraphs A10.192 to A10.193 above);

- Communications costs: we have not accounted for the cost savings that are likely to result from the reduction of consumers' calls to call centres (as well as lower consumer time costs) associated with making 080 free-to-caller. For example, we expect less calls to call centres associated with bill shock arising from calls to 080 numbers (see paragraph A10.266); and

- PCA costs: we have not accounted for the cost savings associated with removing the PCAs currently existing for chargeable calls from mobile telephones to 080 numbers (paragraph A10.281).

Assessment of the costs of making the 116 range free-to-caller

Summary of our position in the April 2012 consultation

A10.290 In the April 2012 consultation we did not conduct a quantification of the costs that would result from making the 116 range free-to-caller.[276]

Stakeholder comments

A10.291 We did not invite any comments from stakeholders on this issue, and we did not receive any comments.

Updated analysis

A10.292 We do not consider that a quantitative impact assessment is necessary for 116. This is for the following reasons:

- We do not necessarily expect that there will be changes to the origination payments received by OCPs following a decision to make 116 free-to-caller. Currently, both fixed and mobile CPs are required to offer 116 numbers free of charge (because the three current 116 numbers are designated as free-to-caller) and our analysis of the average outpayments from SPs to OCPs (through hosting charges paid to TCPs) is consistent with our Impact Assessment Range ('IAR') for this number range (as further explained in Section 12).

[276] See Annex 27, Part C, of the April 2012 consultation.

- Even if there were changes to the origination payments received by OCPs, this would be unlikely to have a material impact on OCPs, given the low volumes of calls to 116 numbers. Similarly, due to the very small number of SPs on the 116 range, and the fact that all existing numbers are already free-to-caller, we would not expect significant migration costs for SPs or communication costs for TCPs.

- In terms of communications and billing costs, all existing 116 numbers are free-to-caller already therefore there is no change in the message from a caller's perspective or from how they are billed by CPs.

A10.293 In light of the above, we remain of the view that it is not necessary to conduct a quantitative assessment of the costs of making the 116 range free-to-caller.

Part A – Annex 11

Quantified impact assessment - benefits

Introduction

A11.1 In this Annex, we set out and respond to stakeholders' comments on our unbundled tariff and Freephone impact assessments, details of which were set out in Section 13, Section 16, and Annexes 16 and 20 to 25 of the April 2012 consultation. Specifically, we set out our analysis of the benefits side of the impact assessment. The impact assessment costs are discussed in Annex 10.

A11.2 In relation to our assessment of the benefits of the unbundled tariff, we present revised estimates of the threshold reduction in price overestimation and threshold shift in demand required in order for the benefits of the unbundled tariff to (just) outweigh the costs. This reflects changes made due to stakeholder comments as well as revisions made as a result of further analysis we have conducted.

A11.3 In relation to our assessment of the 080 and 116 number ranges, we have not conducted a quantified assessment of the benefits of making the ranges free-to-caller against the potential costs. Below we explain in detail why we have decided to conduct a qualitative assessment of the benefits instead.

A11.4 This section is structured as follows:

- we summarise the approach we took in our April 2012 consultation to assessing the magnitude of the potential benefits from the unbundled tariff;
- we summarise stakeholder comments and set out our response to these comments on all issues other than those relating to the 09 number range;
- we present our further revisions to the benefits modelling and the final results for the 084/087 number ranges;
- we discuss stakeholder comments on our modelling of the benefits of the unbundled tariff for the 09 number range and present our final results on benefits modelling for 09; and
- finally, we respond to stakeholder comments on our approach to assessing the benefits of making 080 and 116 calls free-to-caller.

The magnitude of the resource costs of the unbundled tariff compared to the potential benefits

A11.5 This sub-section is set out as follows:

- summary of our position in the April 2012 consultation;
- stakeholder comments and our responses on all issues other than the 09 number range;
- our further revisions to the benefits modelling and the final results for the 084/7 number ranges; and

- stakeholder comments on 09 and our response.

Summary of our position in the April 2012 consultation

Consumer detriment

A11.6 In Table A16.1 in Annex 16 of the April 2012 consultation, we set out the sources of consumer detriment at the retail level. we drew a distinction between two aspects of poor consumer price awareness:

- concern 1 captured the situation where consumers were fairly confident that they knew the price but where their expectation was wrong; and
- concern 2 captured the situation where the consumer did not know what the price was and was deterred as a result of that uncertainty (e.g. because of risk aversion – fear of a large bill).

A11.7 We considered that this distinction was useful when we came to discuss our modelling (see below).

Benefits of the unbundled tariff

A11.8 In paragraphs A16.13 to A16.19 of the April 2012 consultation, we considered that the unbundled tariff would address some of our retail concerns in relation to residential callers.[277] In particular, we considered it likely that the unbundled tariff would alleviate suppressed demand for NGCs for the following reasons:

- the extent to which residential callers misperceive prices is likely to be reduced (this relates to concern 1 above);
- the extent to which residential callers are deterred from making NGCs because they are unsure about the price is likely to be reduced (this relates to concern 2 above);
- the actual price of non-geographic calls is likely to fall; and
- increased investment and innovation by SPs may improve the quality and variety of services available via non-geographic numbers

Approach to modelling these benefits

A11.9 We recognised the difficulties of quantifying the above effects in practice. Consequently, we quantitatively assessed the benefits of the unbundled tariff for residential callers in two separate ways (and assessed the remaining impacts qualitatively):

1) Under the existing system, we found residential callers tended to overestimate the price of non-geographic calls. We considered that the unbundled tariff could reduce the extent of this overestimation which would, in turn, increase demand for non-geographic calls (this relates to concern 1 above). We calculated the

[277] We only focussed on residential callers because the concerns we identified in the market for NGCs primarily affected residential callers (see paragraph 16.22 of the April 2012 consultation). However, we did consider the impact qualitatively on stakeholders more generally, including OCPs, TCPs and SPs, in Annex 16.

proportion of the gap between actual and expected prices that would need to be eliminated in order for the benefits of these extra calls to (just) outweigh the costs of the unbundled tariff.

2) We also considered that the unbundled tariff could prompt a shift in demand i.e. a general increase in demand, separate from the impact on price overestimation. This could occur if a reduction in price uncertainty led to fewer residential callers being deterred from making NGCs (this relates to concern 2 above). It could also arise following an improvement in the quality and increase in the variety of services available via non-geographic numbers (this relates to the effect in the fourth bullet above). We calculated the percentage shift in overall demand that would result in sufficient benefits to (just) outweigh the costs of the unbundled tariff.

A11.10 In both cases, we argued that these effects would lead to residential callers making more non-geographic calls, which would tend to increase overall consumer surplus. In addition, those increased call volumes will tend to increase OCPs' incremental profits from non-geographic calls, some of which were likely to be passed on to callers through lower prices for other telecoms services (the tariff package effect, or TPE). Our approach to modelling the consumer benefits from making more non-geographic calls and from the TPE was set out in detail in paragraphs A16.22 to A16.41 of the April 2012 consultation.

A11.11 We modelled the effects for fixed and mobile calls to each of the following number ranges: 0843/4, 0845, 0870, 0871/2/3 and 09. These were the number ranges where we proposed to implement the unbundled tariff (excluding the 118 range). We set out all of our detailed modelling assumptions in paragraphs A16.42 to A16.101 of the April 2012 consultation.

A11.12 In paragraphs A16.103 to A16.111, we set out the effects we did not model. In summary:

- we did not model the impact of a change in actual NGC prices because these prices are interrelated with the price of other telecoms services (the tariff package effect). This made the welfare effects of a price change difficult to quantify;

- we did not quantify the particular weight we attached to the supply of socially important services to vulnerable consumers. It was difficult to attach a monetary value to this effect because the prices of NGCs are interrelated with the price of other telecoms services (the tariff package effect). Again, this made the welfare effects difficult to quantify;

- we did not model the impact on business callers, SPs, OCPs and TCPs. In paragraph A16.606 we stated that this was because we did not have sufficient information to do this accurately.[278] In paragraph A16.107, we distinguished between two effects of the unbundled tariff on these parties:

    - o an increase in the number of NGCs made – in paragraph A16.108 we qualitatively considered that the effect of increased call volumes was likely to be positive for OCPs, TCPs and SPs; and

[278] In addition, we asked for stakeholder views on a proposal to exclude business callers from the requirements of the unbundled tariff. (See Part B, Section 12 of the April 2012 consultation, paragraphs 12.195 to 12.196).

  - o increased competition between OCPs – in paragraph A16.109 and footnote 84, we acknowledged that increased competition was likely on average to have a negative impact on suppliers' profits, but our view was that it was generally likely to be outweighed by the wider benefits, such as lower prices for customers.

- Finally, we considered that applying the unbundled tariff to 0845 and 0870 calls might lead to some SPs migrating away from those number ranges, such as to 03. We considered that this would tend to reduce the volume of calls to 0845 and 0870 numbers and increase the volume of calls to number ranges such as 03. We did not take this into account in our modelling because we recognised that doing so would involve assessing how much better or worse a consumer would fare if a number were on 03 rather than 0845/0870. We considered that this was not straightforward.

Results

A11.13 Given the uncertainty around our estimates, we modelled the effects under three different scenarios – a base case, an optimistic case and a pessimistic case.[279] The results of our estimates indicated that only a relatively small improvement in the accuracy of consumer price expectations or a relatively small increase in demand for NGCs would be required in order for the benefits of the unbundled tariff to outweigh the costs. We noted that these thresholds were independent of one another and that only one would need to be met for our proposal to have a net positive impact:

- in our base case, we found that eliminating between 2.1% and 10.7% of the gap between expected and actual prices would suggest that benefits of the unbundled tariff to residential consumers would (just) outweigh the resource costs.[280] Individually varying our assumptions did not significantly affect these figures. It was only in our pessimistic case, reflecting the aggregate effect of multiple unfavourable assumptions, that these thresholds exceeded 10% reaching a maximum of 35% in the most pessimistic scenario. However, this pessimistic case was only intended to provide an upper bound rather than to identify a likely outcome and so we placed less weight on the result from this scenario; and

- in our base case, we found that a shift in demand of 0.8% to 2.3% relative to the counterfactual[281] would create benefits for residential consumers that would (just) outweigh the resource costs of the unbundled tariff.[282] Individually varying our assumptions generally did not significantly affect these figures. In one pessimistic case (with multiple adverse assumptions) the thresholds were higher, ranging from 2.7% to 4.5% but, for the reasons set out above, we placed less weight on this result.[283]

[279] The full set of assumptions applied to each scenario were set out in Table A16.17 in Annex 16 of the April 2012 consultation.
[280] This range was driven by varying our measure of expected prices and expected cost scenarios.
[281] We assume that total NGC volumes decline over time even under the unbundled tariff (see paragraphs A11.36 below) but that this shift in demand increases volumes compared to the larger decline in volume we consider would occur in the absence of the unbundled tariff.
[282] This range was driven by varying our measure of expected prices and expected cost scenarios.
[283] See paragraphs A16.117 to A16.132 of the April 2012 consultation.

A11.14 We considered that it was likely that the unbundled tariff would improve price expectations by considerably more than the 2.1% to 10.7% estimated in our base case. Indeed even if the thresholds were higher (due to a combination of pessimistic assumptions about the benefits of the unbundled tariff) we considered that they were still likely to be exceeded for the reasons set out in paragraph 13.53 of the April 2012 consultation. In summary, these were related to the likely impact of the unbundled tariff on price awareness, as set out in Section 9 of the April 2012 consultation:

- the unbundled tariff allows SPs to clearly communicate an important element of the price of calling them, namely the SC;
- providing consumers with the SC for some calls may improve the accuracy of their price expectations for other calls (i.e. the horizontal externality); and
- it will be easier for OCPs to communicate the AC to their customers than the current plethora of retail price points.[284]

A11.15 We also considered that a 0.8% to 2.3% shift in demand might be prompted by a general increase in consumer confidence in making NGCs or by improved service availability. We considered it plausible that the unbundled tariff would increase demand by at least this amount and set out our reasons for this in paragraph 13.54 of the April 2012 consultation. In summary, these were:

- while we accepted that price elasticity of demand for services using non-geographic numbers varied, we presented evidence which suggested that demand was likely to have some sensitivity to price even for services where there were few alternatives;
- consumers' awareness of the price of NGCs was poor and this uncertainty was likely to contribute to consumers' lack of confidence in these numbers and discourage them from making NGCs. We considered that the unbundled tariff would lead to an improvement in consumers' confidence in making these calls; and
- demand may also increase in response to SPs introducing additional services as a result of the unbundled tariff.[285]

A11.16 In practice, we considered that the unbundled tariff was likely to both reduce the extent to which consumers overestimate prices and lead to a shift in demand. As explained above, we considered that the benefits to residential consumers of the reduction in price overestimation alone were likely to substantially exceed the resource costs of the unbundled tariff. Thus, we considered that taking any shift in demand into account would reinforce this conclusion.[286]

A11.17 In addition, given our generally conservative modelling assumptions and since we did not include all of the benefits of the unbundled tariff in our quantified modelling, we argued that the thresholds we estimated were likely to be biased upwards i.e. biased towards underestimating the benefits of the unbundled tariff. In particular:

[284] See paragraph 13.53 of the April 2012 consultation.
[285] See paragraphs 13.54 to 13.55 of the April 2012 consultation.
[286] See paragraph 13.56 of the April 2012 consultation.

- we did not model all benefits of the unbundled tariff (e.g. we did not model the benefits of any increase in competition between SPs and OCPs that may arise from greater price transparency);

- we did not model the benefits for SPs (who are classed as consumers under the 2003 Communications Act), OCPs (apart from those that are passed on to consumers via the TPE), and TCPs ;

- in modelling a shift in demand by pivoting the demand curve (rather than as a parallel shift in the demand curve) we may have understated the benefits of improved service availability and quality; and

- we modelled the effects of a reduction in price overestimation and a shift in demand separately i.e. we did not model the additional benefits that come from combining these effects. In practice, we would expect both effects to occur as a result of the unbundled tariff.[287]

Stakeholder comments and our responses on all issues other than 09

A11.18 Whilst EE agreed with Ofcom's approach to only model the benefits for residential consumers, it noted that it was important that Ofcom ensured its proposals did not cause overall net welfare detriment to OCPs, TCPs, SPs and business customers. It noted that Ofcom's impact assessment did not consider the welfare impact on these parties other than in a highly cursory fashion, in particular the potentially negative effect of competition (referencing paragraphs 13.58 – 13.61 and in particular footnote 730 of the April 2012 consultation). It also considered that Ofcom backed away from its own advice in being conservative in its estimates because this would have led to a requirement for a 34.9% reduction in price overestimation, and a 4.5% shift in demand, which might not be realistic given the general decline in the non-geographic numbers market.

A11.19 EE argued that there was an inherent and unavoidable uncertainty as to whether or not Ofcom's proposals would result in any benefits at all and this uncertainty could not be mitigated by the use of any form of conservative modelling assumptions. It stated that given that Ofcom argued that even a fractional reduction in hypothetical price misperception would generate sufficient benefits to offset the resource costs of unbundling, Ofcom needed to face up to the possibility that its unbundling proposals could also generate fractionally worse call decisions in the real world. However, EE did not explain why it considered that this could be the case. Overall, EE did not believe Ofcom provided evidence adequate to justify a decision to progress with its radical proposals.[288]

A11.20 BT argued that it was difficult to quantify the impacts given that the design had not been finalised. It said that it hoped that the changes would result in a greater degree of consumer price awareness and that they would give consumers the protection that BT customers currently enjoyed. It said the proof of success would be an increased inclination to call.[289]

A11.21 O2 said that the dismantling of the current regime would remove the benefit to consumers of common, simple pricing for mobile voice shortcodes (where the price was linked to the BT retail price so consumers faced the same price whether calling

[287] See paragraph A16.134 in Annex 16 (Part B) of the April 2012 consultation.
[288] EE, April 2012 consultation response, p.43.
[289] BT, April 2012 consultation response, p.26.

from a mobile phone or from a BT fixed line). It said Ofcom needed to reflect this "cost" in its cost benefit analysis.[290]

A11.22 Other respondents were broadly supportive of our approach to the impact assessment for the unbundled tariff.

A11.23 Vodafone was pleased to note that Ofcom modified its approach and aimed instead to reduce rather than eliminate price misperception. It noted that the threshold for the benefits to exceed costs was low.[291]

A11.24 Three broadly agreed with our methodology, but believed Ofcom had underestimated costs of communication. However, it commented that the net benefits were likely to be significantly positive even taking these higher costs into account.[292]

Ofcom's response

A11.25 In relation to its point regarding the net welfare impact on OCPs, TCPs and SPs, EE referred to our drafting in paragraphs 13.58 to 13.61 of the April 2012 consultation. Here we considered the impact of our proposal on consumers in a broad sense (including business customers and SPs) and on our stakeholders more generally. In doing so, we observed that increased call volumes (as a result of improved price awareness etc) were also likely to benefit OCPs, TCP and SPs because all of these parties were likely to benefit from originating and receiving more calls. We said this was an additional positive effect from increased NGC volumes that was not captured in our calculations of quantified effects. We also observed that increased competitive pressures on SPs and OCPs were likely to have a positive overall effect when we considered the impact on all stakeholders, including callers. We recognised that increased competition was likely, on average, to have a negative impact on suppliers' profits, but stated that we thought this was generally likely to be outweighed by the wider benefits, such as lower prices for customers and higher-quality services.

A11.26 We disagree with EE's view that we should have considered this issue in more depth. EE has not identified any factors which might impact on the welfare of OCPs, TCPs and SPs in addition to those we considered in the April 2012 consultation, and so we assume it meant we did not investigate the impact of these two factors in sufficient detail. In relation to the first effect, we consider it reasonable to assume that greater call volumes would in general lead to increased revenues for all NGC suppliers. It is generally held that an increase in demand tends to benefit suppliers (all else equal) and we are not aware of any features of the NGC market that would mean this is not the case in this particular context. As a result, we do not consider that our analysis is deficient without assessing this effect in more detail. In relation to the second effect, we recognised that increased competition may have a negative impact on suppliers' profits but noted the benefits to consumers in the form of lower prices and higher quality services were likely to outweigh this negative effect. We did not consider further analysis of this effect necessary (even if it had been possible) given the greater weight we place on lower prices and higher quality services for consumers relative to the weight we place on suppliers' profits. We note that weighing these effects in this way is in line with our

[290] O2, April 2012 consultation response, p.23.
[291] Vodafone, April 2012 consultation response, pp.49 & Annex 1, p.33.
[292] Three, April 2012 consultation response, p.20.

duty to further the interests of citizens and consumers, by promoting competition where appropriate.

A11.27 We disagree with EE's comment that we have backed away from being conservative. As set out above, the estimates that EE referred to, as with the pessimistic threshold estimates discussed above, were calculated using multiple unfavourable assumptions and we therefore consider them to be unduly pessimistic. While we treated the results generated by the pessimistic assumptions as an upper bound, we considered it unlikely the assumptions needed to generate this upper bound would hold.

A11.28 In relation to EE's comment that the unbundling proposal may not lead to any consumer benefits or could even result in consumers making (fractionally) worse call decisions, we think these outcomes are unlikely. We acknowledge the uncertainty around the impact of implementing the unbundled tariff. However we considered the likely impact of the unbundled tariff on consumer outcomes in detail in Section 8, where we concluded that the unbundled tariff is likely to significantly improve consumer awareness of non-geographic call prices, both at the point of call and at the point of subscription. In particular, we noted that the pricing message to consumers will be simpler, the simplified structure of the AC will make it easier for consumers to remember and there will be a consistent and rationalised pricing structure applying to all non-geographic number ranges. As a result, we consider that despite the significant uncertainty about the exact extent of the benefits from the unbundled tariff, it is reasonable to assume that consumers will benefit.

A11.29 We do not accept EE's criticism that we have not provided sufficient evidence to justify implementing the unbundled tariff. Our impact assessment results (the updated results are set out below) show that there only needs to be relatively small improvements in consumer price awareness and/or confidence for the likely benefits to outweigh our estimates of the likely costs of this remedy. As discussed above, the evidence we have seen (see paragraphs A11.13 to A11.17) supports the view that the benefits from the unbundled tariff in terms of consumer price awareness are likely to be significant, and in particular to exceed the low threshold levels suggested by our impact assessment. EE has not made any challenges to our impact assessment or to our views on the likely benefits of the unbundled tariff which would cause us to revise our conclusion, and so we have concluded that the evidence we have presented does justify the unbundled tariff remedy (see Section 8).

A11.30 On BT's point about the design of the remedy not being finalised at the time of the April 2012 consultation, we respond to similar arguments made by other stakeholders in Annex 19. We have made several updates to our cost estimates to take account of any amendments to the design of the unbundled tariff (for example the number of SC price points – see Annex 10).

A11.31 We have set out our response to O2's comment about the impact of the unbundled tariff structure on mobile voice shortcode pricing in Annex 19 (see paragraph A19.48). We disagree that the absence of a single BT retail price point will be a material detriment to consumers in terms of mobile voice shortcode pricing and therefore we do not consider this needs to be taken into account in our impact assessment.

Our further revisions to the benefits modelling and the final results for the 084/7 number ranges

A11.32 Following comments from stakeholders as well as further analysis by Ofcom, we have made a number of revisions to the model since the April 2012 consultation. Our revised threshold estimates are presented below. In summary, we have made the following changes to the model:

- amended our estimates of the costs of implementing the unbundled tariff (see Section 8;
- removed the estimates associated with the 09 range and modelled the impact on that range separately (henceforth, we refer to the previous model detailed in Annex 16 of the April 2012 consultation as the 084/7 model). This decision, as well as the modelling approach and results, are explained in further detail in paragraphs A11.67 to A11.132 below;
- adjusted the model to reflect the fact that the unbundled tariff is likely to be implemented in late 2014 and accordingly converted all inputs of the model to 2014 prices;
- removed one measure of consumers' expected prices – those taken from the 2011 Consumer survey – from our main estimates (i.e. the base, optimistic and pessimistic cases). This is to reflect the fact that we do not consider the results of this particular consumer survey to be realistic. Therefore, while we continue to publish threshold estimates generated based on the 2011 Consumer survey results, we do not place any weight on them;
- corrected an error in the method we used to calculate the weighted average benefit per NGC;
- considered whether we need to change the method we have applied to calculate the benefits to residential consumers that flow to them in the form of lower prices via the tariff package effect;
- discussed whether or not to apply mid-year discounting;
- used the Spackman discounting approach as our standard approach to discounting stakeholders' one-off costs of introducing the unbundled tariff; and
- updated our estimates of the incremental cost of fixed and mobile NGCs.

A11.33 The costs of implementing the unbundled tariff are discussed in Annex 10 and the 09 impact assessment is discussed in paragraph A11.67 onwards in this Annex below. We discuss the issues in the remaining bullet points below.

The year of implementation

A11.34 In the April 2012 consultation our model implicitly assumed that the unbundled tariff would be implemented in 2009. However, we have since recognised it would be appropriate to adjust the model to reflect the fact that the unbundled tariff is likely to be implemented in 2014. This is discussed in detail below.

A11.35 In the April 2012 consultation, we:

- assumed that the unbundled tariff would be implemented in 2009;

- modelled costs and benefits over a ten year period (see paragraph A16.46 of the April 2012 consultation) – i.e. modelled the costs and benefits of the unbundled tariff for the period 2010-2019[293]; and

- assumed that the overall volume of NGCs is steadily declining by 10% per year (see paragraph A16.48 to A16.52 of the April 2012 consultation). We tested the sensitivity of the results to this assumption by assuming, in our pessimistic case, that the overall volumes of NGCs were declining by 15% per year. In paragraph A16.52, we discussed the impact of compounding on the total volume of NGCs at the end of the modelling period (i.e. year 10) and noted that a fast rate of decline implied the disappearance of the vast majority of NGCs. For example, a 10% annual decline implied that total NGC volumes in year 10 declined to 39% of volumes in year 1, whilst a 15% annual decline implied that year volumes declined to 23% of volumes in year 1. We noted that this disappearance of the vast majority of NGCs was not consistent with stakeholders' arguments that there are few alternatives to making calls to non-geographic numbers.

A11.36 Correcting the first of these assumptions so that the model reflects the fact that the unbundled tariff will be implemented in 2014 instead has certain implications:

- the ten year period for which we model the costs and benefits of the unbundled tariff is 2015-2024 rather than 2010-2019[294]; and

- overall volumes of NGCs will have declined during the period before the implementation of the unbundled tariff – i.e. between 2009 (the year for which we have data for volumes, expected and actual prices) and 2014. In the counterfactual (i.e. in the absence of unbundling), volumes will also continue to decline post-2014. If we continue to assume that overall volumes of NGCs decline by 10% per year, this would imply that total NGC volumes in year 10 (i.e. 2024) would be 21% of their 2009 level. In addition, if we continue to assume, in our pessimistic case, that overall volumes of NGCs decline by 15% per year, this would imply that total NGC volumes in year 10 would be 9% of their 2009 level. As stated above and in the April 2012 consultation, this disappearance of an even larger majority of NGC volumes is not consistent with stakeholders' arguments that there are few alternatives to making calls to non-geographic numbers.

A11.37 Consequently, we have altered our assumption about the annual decline in overall volumes of NGCs. We recognise that the future volume of NGCs is uncertain and difficult to predict. However, whilst some stakeholders have highlighted that the market for NGCs is in decline, no one has argued that it will disappear entirely. Despite the growth of alternative ways to make contact or obtain information, such as the internet and, to a limited extent, MVSCs, we do not consider these alternatives will offer an adequate substitute for all services that are currently provided via non-geographic numbers, particularly where the consumer requires an

[293] Apart from in our pessimistic case where we modelled the costs and benefits over a five year period. The modelling period was designed to begin in 2010 and not 2009 (the year of implementation) because 2010 was assumed to be the first full year in which the costs and benefits of the unbundled tariff would be realised.

[294] Similar to our previous approach, the modelling period is designed to begin a year after the year of implementation (2014) because the unbundled tariff will not be implemented until late-2014 and thus 2015 will be the first full year that costs and benefits will be realised.

instant and interactive response. For example, it is possible to envisage a number of enquiry or helpline services migrating to the internet, using 'Q&A' or 'Frequently asked questions' pages or 'instant messaging' services. However in many cases, it is likely that the consumer requires human interaction or desires an instant response e.g. when they need to discuss important or emotive matters such as health or finance, and the less personal service typically offered over the internet may not be a good substitute for these situations.

A11.38 In light of this, we have made a judgement about the long term trend in overall volumes of NGCs. In the short term (i.e. up until 2014), we continue to assume that the overall volume of NGCs declines by 10% per year. This is consistent with recent data gathered from TCPs.[295] In particular, between 2010 and 2011, volumes appear to have declined by approximately 10%.[296] However, given our discussion about compounding in paragraph A11.36 above, we consider that it would be excessively pessimistic to assume that this level of decline would continue in the medium to long term. We accept that a certain number of services may migrate to other alternatives such as the internet and, to a lesser extent MVSCs, but for the reasons set out above, we consider that a significant core of services will continue to use non-geographic numbers. To reflect this, we assume that in 2014 the rate of decline in NGC volumes will slow down. As a benchmark, we note that overall fixed call volumes are declining by around 5%.[297] [298] As the basis for our modelling assumptions we consider that the annual rate of decline in overall volumes of NGCs will converge towards this rate, reflecting the fact that substitution of services to other alternatives such as the internet will slow down and potentially cease at a certain point but also reflecting the fact that the volume of telephone calls is generally declining. However, for simplicity, we have modelled this in two steps – a rate of decline pre-2014 and a rate of decline post-2014.

A11.39 Our revised assumptions for the annual decline in NGC volumes in our optimistic, base and pessimistic cases are set out in Table A11.1 below.

[295] Formal s135 information request sent to BT, CWW, TalkTalk, Virgin Media, Gamma and KCom in July 2012. These TCPs represent roughly two-thirds of the market for terminating calls to non-geographic number ranges (according to the 2010 Flow of Funds study, Figure 5.3, p.10). The extent to which we can draw inferences from volume data obtained from these TCPs is therefore limited because we have made an assumption about the remaining third of the market.

[296] For example [✂] non-geographic call volumes declined by 10% between 2010 and 2011.

[297] This was calculated based on the figures presented in Figure 5.1 of Ofcom's 2012 Communications Market Report.

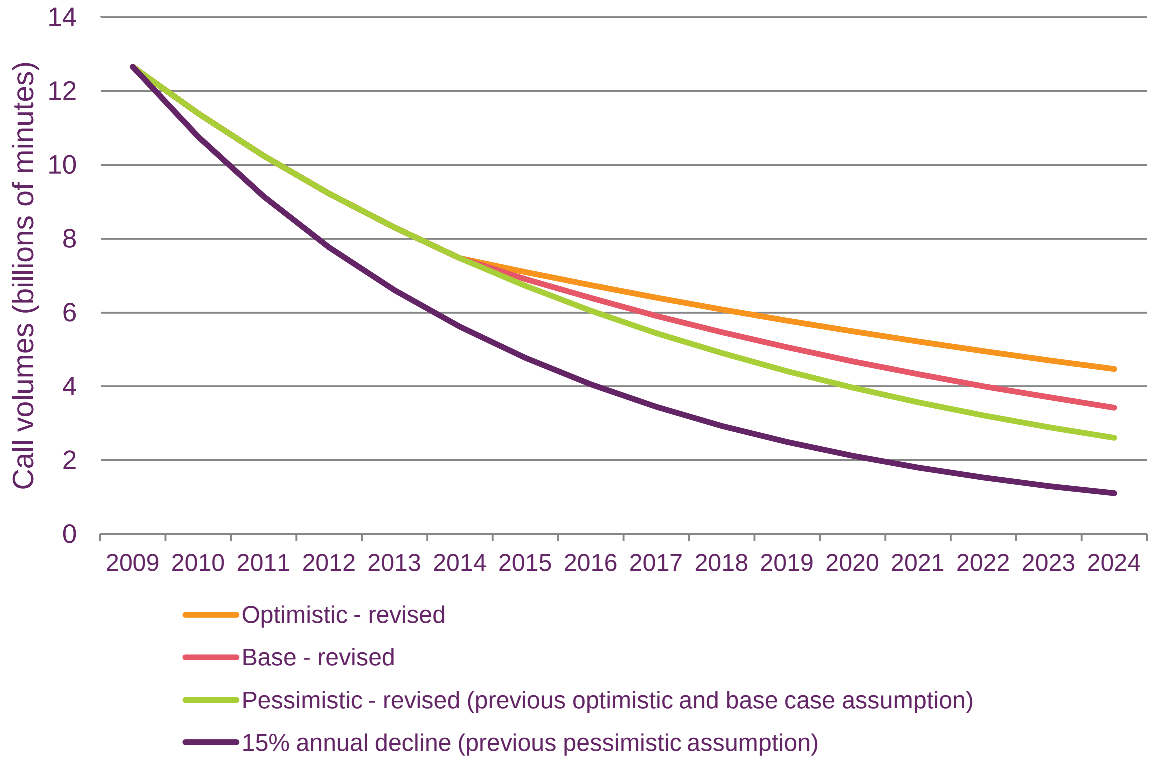
[298] We note that this slowing of the rate of decline in NGC volumes is not linked to the implementation of the unbundled tariff. The annual decline in NGC volumes assumed in the model reflects the situation without the unbundled tariff (i.e. the counterfactual).

Table A11.1: revised volume trend assumptions

	Optimistic case	Base case	Pessimistic case
Annual decline in NGC volumes pre-2014 (previous assumption)	-10% (-10%)	-10% (-10%)	-10% (-15%)
Annual decline in NGC volumes post-2014 (previous assumption)	-5% (-10%)	-7.5% (-10%)	-10% (-15%)

A11.40 Given the discussion above, we consider that the revised assumptions set out in Table A11.1 reflect a more realistic set of scenarios. To illustrate this, Figure A11.2 below compares the implications of the revised assumptions with the assumptions implied in the April 2012 consultation. As shown, if we were to assume that overall NGC volumes declined by 15% per year (see curve labelled ‘15% annual decline’), this implies that the market for NGCs will have shrunk in 2024 to around one billion minutes (9% of 2009 volumes). Similarly, if we adopt the assumption of our pessimistic case – i.e. that overall NGC volumes decline by 10% per year, this implies that the market will have shrunk to less than three billion minutes in 2024 (around a fifth of 2009 volumes). For the reasons set out above, we do not consider that this is a likely projection of future NGC volumes. Consequently, the figures in our pessimistic case are presented as an upper bound and we place less weight on these results. Although our revised assumptions of the annual decline in NGC volumes in our base and optimistic cases still imply that the NGC market will shrink significantly (2024 volumes are only around a third of 2009 volumes in our most optimistic case), we consider this is a more realistic projection of future NGC volumes.

Figure A11.2: Comparison of revised volume assumptions with April 2012 assumptions



A11.41 For consistency, we have converted prices and costs in the model to 2014 levels in line with inflation (see Table A11.2 below for our assumptions about past and future inflation). This is so that all of the model's inputs are expressed in the same year's prices:

- Actual and expected prices – we assume that inflation has the same impact on both actual and expected prices and therefore does not affect the percentage difference between the two.[299] Consequently, we have converted both actual and expected prices into 2014 prices to reflect the impact of inflation between 2009 and 2014. We have chosen 2014 because we are assuming that this will be the year the unbundled tariff will be implemented. We assume that the rate of VAT will be set at 20% in 2014 and will remain at this level throughout the modelling period (reflecting current VAT) and we have adjusted actual prices accordingly (previously we assumed a rate of 15% as this was the prevailing rate of VAT in 2009).

- Costs of unbundling:

    - One-off costs – estimates of one-off costs were obtained from stakeholders and are described in detail in Annex 10. We have adjusted these costs in line with expected inflation between 2011 and 2014; and

[299] We recognise that in practice, the gap between consumers' actual and expected prices may either have narrowed or widened since 2009. We have not seen evidence which suggests the gap has moved in either direction, therefore we consider that maintaining the same percentage gap over time between actual and expected prices reflects the most neutral assumption we can make.

- o Annual costs –estimates of annual costs were obtained from stakeholders and are described in detail in Annex 10. Similarly, we have adjusted these costs to reflect projected inflation throughout the modelling period (2015-2024), to reflect the fact that annual costs are likely to increase in line with inflation each year.

- OCP mark-up – in paragraphs A16.38 to A16.41 of the April 2012 consultation, we set out the method we adopted for estimating the increase in OCPs' profits brought about by an increase in NGCs, which flowed back to consumers via the tariff package effect. The two components of these estimates were the average incremental cost of an NGC and OCPs' average retention (see Table 16.4 of the April 2012 consultation). We have converted these into 2014 prices.

Table A11.3: Inflation and VAT assumptions

	2009	2010	2011	2012	2013	2014	2015	2016	2017+
Inflation	-	4.6%	5.2%	2.7%	2.5%	2.6%	3.0%	3.1%	3%

Note: 2010 and 2011 inflation figures are from the ONS, and 2012-2016 inflation is based on Treasury estimates (December); we assume for simplicity that inflation in 2017 and every year thereafter remains constant at 3%.

Measure of consumers' expected prices

A11.42 Our use of the estimates for the average expected price taken from the 2011 consumer survey has led to some confusion among stakeholders (see for example paragraph A8.12 (third bullet point) of Annex 8). In particular, EE misinterpreted the 2011 Consumer survey results as evidence that the accuracy of consumers' price expectations has improved since 2009. In considering our response to these comments, we have re-assessed whether it is appropriate to use these estimates in our base scenario and have concluded it is not. Accordingly, we have removed the average expected price taken from the 2011 Consumer survey from our main estimates.[300]. This is because, for the reasons set out in paragraph A16.68 of the April 2012 consultation, this measure of consumers' expected prices understates the amount by which they overestimate prices.

A11.43 In summary, this was because the 2011 Consumer survey only asked for a ppm estimate of the cost of a 0845 and 0870 call from those consumers who responded to an earlier question that they knew the cost of these calls. These consumers represented a minority of all respondents who considered themselves to be relatively price aware, and were therefore likely to make more accurate predictions of actual prices than the majority of respondents who did not consider themselves aware. We noted that a significantly higher proportion of respondents stated "I do not know how much it costs per minute but think it is expensive" compared to those saying "I…do not think it is expensive" (see Table A11.4 below), which we interpreted as reinforcing our conclusion that these less aware consumers, who represent the majority of respondents[301], tended to think these calls were

[300] In spite of this, we continue to present the results generated by applying the 2011 Consumer survey expected prices in a footnote below.

[301] For fixed calls, there were 1,512 respondents to the first question (Q. GL01X): "Which of the following statements best describes what you know about the cost of calling a number starting with 0845/0870 from your landline?" However, only 223 0845 and 113 0870 callers responded to the second question (Q. GL01A): "How much per minute do you think it costs to call a number starting

expensive. We therefore considered it likely that if we had asked these respondents to provide a ppm figure then it would have increased our estimates of the mean expected price.[302] We set out a more detailed explanation of this in Section 4.

Table A11.4: Consumers beliefs about fixed and mobile 0845/0870 calls

	Fixed 0845 (1512/223)	Fixed 0870 (1512/113)	Mobile 0845 (1601/162)	Mobile 0870 (1601/124)
I have never heard of [those] numbers	7%	17%	4%	11%
I know how much it costs per minute	14%	7%	10%	7%
I do not know how much it cost per minute but think it's expensive	39%	37%	51%	46%
I do not know how much it cost per minute but do not think it's expensive	15%	7%	8%	5%
I do not know how much it cost per minute and don't know whether it's expensive	24%	32%	27%	30%

Source: 2011 Consumer survey, question GL01X/Y

A11.44 Because of the problems we have identified with this measure of price expectations, we do not consider it appropriate to use it in our analysis. We consider that the purpose of our scenario analysis is to consider a range of plausible scenarios and we consider that the 2011 Consumer survey results fall outside of this range.

Method used to calculate the weighted average benefit per NGC

A11.45 In paragraph A16.45 and footnote 23 of April 2012 consultation, we explained that we estimated the gain in welfare for an increase in overall demand for NGCs by calculating the weighted average benefit per additional call. After the April 2012 consultation was published, we noticed that our method of doing this was incorrect. We had performed our calculation by first computing a measure of average welfare per call by call type and then weighting this average welfare measure by the share of overall consumer surplus (i.e. over all call types) accounted for by that call type. In the original calculations we then calculated the average of these weighted welfare gain per call estimates over all calls. However, the correct approach would have been to sum these estimates of weighted welfare per call over all calls to arrive at an estimate of the total welfare gain.

A11.46 The model has been adjusted accordingly and, as can be seen by the results in Tables A11.7 & A11.8 below, it has led to a general reduction in the estimated thresholds for the overall shift in demand.

with 0845/0870, during peak hours, in the daytime on a weekday, from your landline?" Similarly for mobile calls, there were 1601 respondents to the first question (Q. GL01Y) but only 162 0845 and 124 0870 respondents to the second question (Q. GL01B).

[302] This was originally set out in paragraphs A16.68 and A16.69 of the April 2012 consultation.

A11.47 Another implication of this change is that it has prompted us to alter the demand function we apply in the different scenarios. As can be seen from Table A11.5 below, when generating results for the shift in overall demand threshold, we now assign the linear demand function to our base case whilst the exponential and constant elasticity demand functions are assigned to the optimistic and pessimistic case scenarios respectively. In other words, using our revised calculations for surplus, the constant elasticity demand function now generates the most conservative (i.e. highest) shift in overall demand threshold estimates, whilst the exponential demand function now generates the most optimistic (i.e. lowest). This is in contrast to the estimates presented in the April 2012 consultation, where the (incorrectly) estimated weighted average welfare gain per call was highest and therefore the most optimistic using the constant elasticity demand function. In terms of estimating the reduction in price overestimation threshold, we maintain the same relative ranking of the demand functions as in the April 2012 consultation – i.e. constant elasticity (optimistic), exponential (base case) and linear (pessimistic).[303]

Tariff package effect calculations

A11.48 In paragraphs A16.38 to A16.41 of the April 2012 consultation, we set out our approach to capturing the impact of the tariff package effect on residential consumers. In particular, we noted that an increase in demand for NGCs brought about by the introduction of the unbundled tariff is likely to increase the incremental profits that OCPs make on non-geographic calls. A proportion of those profits is likely to be passed on to residential consumers via lower prices for telecoms services (the tariff package effect - TPE).

A11.49 To account for this, we gathered information on the incremental profitability of non-geographic calls from residential consumers for OCPs, i.e. OCPs' average mark-up per NGC (presented in Table A16.4 of the April 2012 consultation). To calculate the change in OCPs' profits, we calculated the change in demand and multiplied it by the average OCP mark-up. We then multiplied this by 0.8 to account for the likelihood that the tariff package effect is incomplete (as OCPs may not pass all of the increase in their profits onto consumers).

A11.50 This estimate of the TPE assumes the only impact of the unbundled tariff on the incremental profitability of non-geographic calls comes from an increase in demand for NGCs. However, as set out in paragraph A19.84 of Annex 19, EE argued that the costs of implementing the unbundled tariff will have to be recovered from prices charged to consumers. As set out in paragraphs A19.93 to A19.98 of that Annex, we recognise that this may be true, at least with respect to any ongoing annual costs of implementation (which, as set out in Table A10.27, are incurred entirely by

[303] The different ranking of the demand functions in the reduction in price over-estimation and shift in overall demand scenarios is driven by the fact that we assume a choke price when using a constant elasticity demand function to model the shift in overall demand scenario (and not when using the same demand function to model the reduction in price over-estimation). As set out in paragraph A16.81 (in particular, footnote 70), we assume a choke price when modelling the shift in overall demand using a constant elasticity demand function due to the properties of this demand function and the way we have modelled this scenario. Without a choke price, the constant elasticity demand function does not cross the y axis. As we model the shift in demand effect by pivoting the demand function around its point of intersection with the y axis, we need to make an assumption about where this point occurs when using the constant elasticity demand function. In contrast, we do not need to make this assumption when modelling the reduction in price overestimation. This is because we measure consumer surplus between two points on the original demand curve- the fact that there is no intersection with the y axis under the constant elasticity demand function is irrelevant in this case.

OCPs). This implies that the unbundled tariff is likely to have both positive and negative effects on the incremental profitability of NGCs:

- a positive effect - through the alleviation of suppressed demand (as discussed above); and
- a negative effect - through the annual costs of implementation.

A11.51 As a matter of principle, we recognise that the TPE should be calculated on the basis of the net impact of the unbundled tariff on the incremental profitability of NGCs (i.e. the positive impact of increased NGC volumes less the negative impact of annual implementation costs). If we were interested in estimating the consumer benefits of our proposal on a standalone basis, we would need to adjust our model to calculate the TPE in this way. However, our analysis does not attempt to estimate consumer benefits in their own right. Rather, it estimates the minimum reduction in price overestimation and the minimum increase in NGC demand necessary for consumer benefits to outweigh the costs of implementation.

A11.52 Our model already includes the annual costs of implementation in the cost side of our analysis. If we were to take into account the fact that some of these annual costs could be recovered from consumers via the TPE, we would need to factor this into our assessment of consumer benefits. However, we would also need to take into account that the annual costs to OCPs would be reduced. As we do not model an elasticity response to the TPE for the reasons set out in Annex 19 paragraphs A19.94 to A19.98 the disbenefit to consumers would be exactly equal to the reduction in costs faced by OCPs. Because we would therefore be subtracting the same amount from consumer benefits as we would from the cost of implementation, and because we apply the same discount rate to annual costs as we do to consumer benefits[304], adjusting our model in this way would not change our estimated thresholds. On a practical level, it would also be difficult to adjust our model in this way, given the way in which it was initially set up.

A11.53 On the basis that it would not make a material difference to our results and would be difficult to implement, we therefore continue to estimate the TPE on the basis of the positive impact of the unbundled tariff on incremental NGC profitability only (whilst recognising the actual TPE may be smaller in practice). We continue to account for the full value of the ongoing costs of the unbundled tariff in our estimate of implementation costs.

Mid-year discounting

A11.54 In the April 2012 consultation, we used the social time preference rate of 3.5% to discount future costs and benefits. This implicitly assumed that costs and benefits are all incurred at the end of the year. However, in practice, we expect that costs and benefits will be incurred more or less evenly throughout the course of the year.

[304]In particular we discount the costs of implementing the unbundled tariff using the Spackman discounting method in all scenarios. As set out in more detail in paragraphs A16.58 and A16.59 of the April 2012 consultation, the Spackman approach involves a two-step process:
(i) Convert capital costs (one-off costs) into annual costs using the company's cost of capital. This gives a stream of financing costs, which should be included as part of the cost side of the cost benefit analysis; and (ii) Use the social time preference rate (STPR) in discounting all costs and benefits, as recommended by the HM Treasury Green Book.
Applying this approach means that only one-off costs of implementing the unbundled tariff are treated uniquely under the Spackman discounting method. All other costs (i.e. annual implementation costs) and benefits of the unbundled tariff are discounted using the same method (using the STPR).

We have therefore tested the sensitivity of the results to adjusting the discount rate to reflect mid-year discounting and found that the different approaches do not have a material impact on the results. Consequently, for simplicity, we have continued to apply our initial discounting approach, using the social time preference rate of 3.5%.

The Spackman discounting approach

A11.55 Previously, we only applied the Spackman discounting approach to the base and pessimistic case scenarios in order to discount the costs of implementing the unbundled tariff, whilst we applied the 'Normal' discounting approach in the optimistic case scenario (the original set of assumptions for each scenario or 'case' were set out in Table A16.17 of the April 2012 consultation). However, we have altered our optimistic case assumptions so that we now adopt the 'Spackman' discounting method (this was explained in paragraph A16.58 of the April 2012 consultation) in all scenarios. This follows the Joint Regulators Group's decision in July 2012 that the Spackman approach is the most appropriate method for CBAs in cases where a private sector firm finances the investment, but benefits mainly accrue to consumers and/or the wider public.[305]

Incremental cost of NGCs

A11.56 In the April 2012 Consultation, we presented our estimates of OCPs' incremental costs of fixed and mobile NGCs in Table A16.4. We used these figures to estimate the change in OCPs' profits that are passed on to consumers via the tariff package effect. As set out in Annex 26, due to changes to the 2011 MCT Cost Model following the CAT MCT Judgment, these figures have been updated. The new figures are presented below in Table A11.5:

Table A11.5 - OCPs' costs, charges and mark-up

	Average incremental cost of call (ppm, 2014 prices)	Average retention (exc. VAT, ppm, 2014 prices)	Average OCP mark-up (ppm, 2014 prices)
Fixed	0.04	3.29	3.25
Mobile	0.85	19.82	18.97

Note: average retention and average mark up figures rounded to two decimal places

Updated threshold estimates

A11.57 Due to the revisions to the model explained above, the updated results are presented below. In Table A11.6, we present the updated list of assumptions we make in our base case, optimistic and pessimistic scenarios (new assumptions or changes to old assumptions are highlighted in bold). In Table A11.7 we present our updated estimates of the improvement in price awareness thresholds alongside the original estimates published in the April 2012 consultation. Then, in Table A11.8 we present our updated estimates of the shift in demand thresholds, again alongside the estimates published in the April 2012 consultation.

[305] The statement can be found here: http://stakeholders.ofcom.org.uk/consultations/discounting-for-cbas/statement?utm_source=updates&utm_medium=email&utm_campaign=cbas-statement

Table A11.6: updated assumptions underlying our optimistic, base and pessimistic case

	Optimistic case	Base case	Pessimistic case
One off, up-front cost of the unbundled tariff (2011 prices)	**£25.6m (low)**	**£49.3m (medium)**	**£73.0m (high)**
Annual cost of the unbundled tariff (2011 prices)	**£1.4m (low)**	**£4.4m (medium)**	**£7.4m (high)**
Demand function – reduction in price overestimation threshold	**Constant elasticity**	**Exponential**	**Linear**
Demand function – shift in demand threshold	**Exponential**	**Linear**	**Constant elasticity**
Elasticity	-0.4	-0.3	-0.2
Fixed price uplift	+5%	+14%	+25%
Mobile price uplift	+10%	+23%	+40%
Volume downlift	-30%	-31%	-32%
Discount period	10 years	10 years	5 years
Discount method	**Spackman**	**Spackman**	**Spackman**
Annual decline in NGC volumes – before the unbundled tariff	**-10%**	**-10%**	**-10%**
Annual decline in NGC volumes – after the unbundled tariff	**-5%**	**-7.5%**	**-10%**
Timing of the benefits of the unbundled tariff	Immediate	Delayed Scenario 1	Delayed Scenario 2

Table A11.7: previous and updated estimates of the improvement in price awareness threshold

	Thresholds presented in the April 2012 consultation				Updated threshold estimates		
	Mode 2009	Mean 2009	Median 2009	Mean 2011	Mode 2009	Mean 2009	Median 2009
Optimistic case	0.3%	0.4%	0.6%	0.9%	0.2%	0.2%	0.4%
Base case (central cost assumption)[306]	2.8%	3.3%	5.7%	8.7%	3.2%	3.8%	6.7%
Pessimistic case[307]	9.5%	11.6%	21.1%	34.9%	12.2%	15.1%	28.4%

Table A11.8: previous and updated estimates of the shift in demand threshold

	Thresholds presented in the April 2012 consultation				Updated threshold estimates		
	Mode 2009	Mean 2009	Median 2009	Mean 2011	Mode 2009	Mean 2009	Median 2009
Optimistic case	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%
Base case[308]	1.1%	1.2%	1.5%	1.9%	0.2%	0.3%	0.4%
Pessimistic case[309]	2.7%	3.0%	3.7%	4.5%	0.8%	0.8%	0.8%

306 For ease of exposition, we present point estimates from within our base case range to compare our base case results from the April 2012 consultation with our updated base case results. These point estimates correspond to our central cost assumption. However, we note that our base case ranges in the April 2012 consultation and in our updated results are wider than these point estimates. This is because we allow for uncertainty within our base case range by modelling thresholds using a higher and a lower estimate of costs than the central cost estimates used in this table. We present our updated estimates of the full base case range (i.e. including high, low and central estimates of cost) in Tables A11.9 and A11.10 below.

307 Using average expected prices from the 2011 Consumer survey generates a threshold reduction in price overestimation, in the pessimistic case, of 56.0%. However, for the reasons discussed above, we do not place any weight on this result.

308 As above, the range of the shift in overall demand threshold was wider in the April 2012 consultation than indicated in this Table.

309 Using average expected prices from the 2011 Consumer survey generates a threshold shift in demand, in the pessimistic case, of 0.8%.

A11.58 In the April 2012 consultation, the results we placed most weight on were the results generated using the base case assumptions. To account for uncertainty, we presented the sensitivity of these results to two major assumptions – the measure of expected prices and the cost scenario (see for example Tables A16.15 and A16.19). We have updated these results in Tables A11.9 and A11.10 below.

Table A11.9: reduction in price overestimation (threshold) in the base case – sensitivity to measure of expected prices and costs

Cost Scenario	Reduction in price overestimation (threshold)		
	Mode 2009	Mean 2009	Median 2009
Low costs	1.4%	1.6%	2.8%
Central cost assumption	3.2%	3.8%	6.7%
High costs	5.0%	6.0%	10.6%

Table A11.10: shift in overall demand (threshold) in the base case – sensitivity to measure of expected prices and costs

Cost Scenario	Shift in overall demand (threshold)		
	Mode 2009	Mean 2009	Median 2009
Low costs	0.1%	0.1%	0.2%
Central cost assumption	0.2%	0.3%	0.4%
High costs	0.4%	0.4%	0.6%

Conclusions on thresholds in light of updated results

A11.59 As in the previous consultation, the objective of this modelling is to give a broad indication of plausible thresholds, rather than precise figures. As shown in Tables A11.9 & A11.10 above:

- In our base case, eliminating between 1.4% and 10.6% of the gap between expected and actual prices of calls to 084/7 numbers would suggest that benefits to residential consumers of introducing the unbundled tariff to these number ranges would (just) outweigh the resource costs.

- It is only in our pessimistic case, which involves the aggregate effect of multiple unfavourable assumptions, that these thresholds rise significantly above 10%. However, we note that the pessimistic case involves the aggregate effect of multiple unfavourable assumptions and is intended to provide an upper bound rather than to identify a likely outcome. Consequently, we place less weight on these results.

- We note that applying optimistic assumptions suggests that the threshold percentage reduction in consumer price overestimation would be very low (less than 1%), although (as with applying pessimistic assumptions) we place less weight on this result.

- In our base case, a shift in demand of only 0.1% to 0.6% would create benefits for residential consumers that would (just) outweigh the resource costs of the unbundled tariff. In our pessimistic case (with multiple adverse assumptions) the thresholds are higher (almost 1%) but, for the reasons set out above, we place less weight on this result. The same applies for the results when applying optimistic assumptions.

A11.60 Since we have not included all of the benefits of the unbundled tariff in the quantified modelling, we consider that these thresholds are likely to be biased upwards, i.e. biased towards underestimating the benefits of the unbundled tariff. We also note that while we have tended to make neutral assumptions, some assumptions have been conservative. In particular, as set out in paragraph A16.36 of the April 2012 consultation, the way in which we have estimated a shift in demand is conservative.[310]

Evidence that thresholds are likely to be exceeded

A11.61 As shown in Table A11.9 above, eliminating between 1.4% and 10.6% of the gap between expected and actual prices would suggest that the benefits to residential consumers (just) outweigh the resource costs. Tables A11.11 and A11.12 below illustrate what this range means in ppm terms. It shows the ppm reduction in 084 and 087 price overestimation necessary for the benefits to residential consumers to (just) outweigh the resource costs of introducing the unbundled tariff to these number ranges.

- the lower end of this range (1.4%) uses the mode expected price from the 2009 Consumer survey (together with our low cost scenario);

- the higher end of this range (10.6%) uses the median expected price from the 2009 Consumer survey (together with our high cost scenario); and

- finally we also show a 3.8% threshold. This was calculated using the mean expected prices from the 2009 Consumer survey together with our medium costs scenario.

[310] Specifically, we assume that demand at all price levels increases by the same percentage amount. This results in a pivot in the demand curve rather than a parallel shift to the right, which means that the consumer benefits of an increase in demand are smaller. We consider this to be a conservative way of modelling a shift in the demand curve which arises because of an improvement in the quality and variety of services available via non-geographic numbers. This is because an improvement in quality is likely to increase the welfare that all consumers receive from making NGCs by a similar amount. As a result, a parallel shift in the demand curve may be more appropriate.

Table A11.11: Threshold for fall in price overestimation for fixed calls expressed in ppm terms

	0843/4	0845	0870	0871/2/3
1.4% threshold	0.38ppm	0.41ppm	0.51ppm	0.41ppm
3.8% threshold	1.04ppm	1.12ppm	1.37ppm	1.12ppm
10.6% threshold	2.90ppm	3.12ppm	3.83ppm	3.12ppm

Table A11.12: Threshold for fall in price overestimation for mobile calls expressed in ppm terms

	0843/4	0845	0870	0871/2/3
1.4% threshold	0.39ppm	0.38ppm	0.50ppm	0.26ppm
3.8% threshold	1.07ppm	1.04ppm	1.35ppm	0.70ppm
10.6% threshold	2.99ppm	2.91ppm	3.76ppm	1.95ppm

A11.62 We consider that it is likely that the unbundled tariff would improve price expectations by significantly more than the amounts set out in the tables above. Indeed even if the threshold were higher (due to a combination of pessimistic assumptions about the benefits of the unbundled tariff) we still consider that it is likely to be exceeded:

- the unbundled tariff requires SPs to clearly communicate an important element of the price of calling them, namely the SC. The 2011 Consumer survey found that 65% of callers obtained the telephone number for the last company or public organisation they called from at least one of the following sources: the internet; a letter, bill or leaflet from the company being called; a written advert; or an advert on the TV or radio.[311] Following implementation, the SP will be required to publicise its SC alongside its number in each of these sources. This should mean that, for around two-thirds of calls the consumer will have the SC in front of them at the point of call. Price awareness for these consumers is likely to be substantially improved; and

- moreover, providing consumers with the SC for some calls may improve the accuracy of their price expectations for other calls. In other words, if for some 084/087 calls consumers are informed of the SC, they are likely to expect that similar SCs will apply to other 084/087 calls (an example of the horizontal

[311] 2011 Consumer survey, question GL14: “Thinking about the last time you made a call to a company, shop or public organisation which of the following did you use to get the telephone number?”

externality working in a way that could benefit consumers). In terms of the AC, we accept that consumers may not always be able to exactly recall their AC e.g. due to the low frequency with which many consumers make NGCs (particularly from mobiles). However, we think it is plausible that many consumers will recall its broad magnitude. Moreover, the AC will have a straightforward structure: a single ppm amount. It will be easier for OCPs to communicate the AC to their customers than the current plethora of retail price points.

A11.63 As shown in Table A11.10 above, the effects of a shift in demand of 0.1% to 0.6% would suggest that the benefits to residential consumers of introducing the unbundled tariff to the 084/087 number ranges (just) outweigh the resource costs. Such a shift in demand might be prompted by a general increase in consumer confidence in making NGCs or by improved service availability. We note that these thresholds are lower than those presented in the April 2012 consultation, where we considered it plausible that the unbundled tariff would increase demand by the necessary amount. Reflecting the fact that our estimate of the required increase in demand is now much lower (a maximum of 0.8% compared with our previous maximum of 4.5%)[312], we can be more confident this threshold will be met when we apply the same reasoning used in the April 2012 consultation:

- In the first instance, we recognise that the scope for an increase in demand is likely to vary depending on the type of service. There seems greater scope for increases in demand for discretionary services provided via non-geographic numbers (e.g. chatlines) than for calls to services such as utilities.

- That said, we nonetheless consider demand is likely to have some sensitivity even for services where there are few alternatives. For example, in the 2011 Consumer survey we asked respondents how many times in the last three months they had made, or considered making, a call to a 08 number that they did not know the cost of.[313] We then asked them to think about the last occasion this had happened and asked what type of service it was and what they did. 2% of respondents said they ultimately did not contact the 08 service and a further 1% used an alternative contact method (e.g. email). In addition, 33% of respondents said they kept the length of the call as short as possible.[314] This suggests that there may be scope for consumers to adjust the number and duration of these calls, and therefore for an increase in demand. It is worth noting that the services in question were utilities (40%), retail banking (19%), public services related to health (13%), sales (9%) and public services related to an area other than health (9%).[315] We also note that, as discussed in Section 16 of the April 2012 consultation, data from the Samaritans suggests that some callers may be sensitive to call prices even for services such as emotional support.[316]

- We discussed the significant difficulties that callers currently experience when trying to obtain accurate pricing information for NGCs in Part A, Annex 8 of the April 2012 consultation (and summarised in Section 4 of this document) and the negative impact these difficulties are having on consumer confidence. In particular, a substantial proportion of consumers currently say that they do not

[312] This reduction has primarily been driven by a correction to a previous error in the way in which the weighted average welfare gain per NGC was calculated (as discussed in paragraphs A11.45 to A11.47 above).
[313] 2011 Consumer survey, question GL05.
[314] 2011 Consumer survey, question GL08.
[315] 2011 Consumer survey, question GL07.
[316] See paragraph 16.92 of the April 2012 consultation.

know the price of NGCs. For example, in the 2011 Consumer survey, 24% of respondents said they didn't know the price of 0845 calls from a landline and didn't know whether they were expensive. The corresponding figures were 32% for fixed 0870 calls, 27% for mobile 0845 calls and 30% for mobile 0870 calls.[317]

- As a result of this uncertainty about prices, consumers are being deterred from making NGCs. For example, the 2009 consumer survey asked respondents how often they would make a call to a number that they know is not contained in their package and also that they don't know the cost of. Only 21% of respondents said that they would make the call 100% of the time, and of these respondents 29% said they would spend less time on the call.[318] A further 21% said that they would never make the call, with the remaining respondents saying that they wouldn't make the call 25-75% of the time. As noted in the April 2012 consultation, we do not consider that the responses to this question give a reliable indication of the scale of suppressed demand. Nonetheless we do consider that they give an indication of the direction of the effect, i.e. that some calls are likely to be deterred by a lack of price awareness or information.[319]

- We consider that the unbundled tariff will lead to a general increase in consumers' confidence in these numbers as there will be less uncertainty and greater transparency over prices. This will reduce the extent to which consumers are suspicious of NGCs and will reduce the number of consumers who are deterred from making NGCs by uncertainty around pricing. This general increase in demand is distinct from the increase in call volumes likely to result from a reduction in price over-estimation because it relates to an outward shift in the overall demand curve rather than a move along an existing demand curve.

- We also consider that an outward shift in demand may occur in response to SPs introducing additional services as a result of the unbundled tariff (see Annex 11 of the April 2012 consultation).

A11.64 Given the low threshold at which the benefits to residential consumers outweigh the resource costs, even if we adopt our pessimistic assumptions, the size of a shift in demand due to the unbundled tariff does not need to be large. Given the potentially large structural change in the market that the unbundled tariff represents, and the scale of the current lack of consumer price awareness and confidence, we consider this threshold is likely to be exceeded. Furthermore, it is important to recognise that this calculation looks at the effect of a shift in demand in isolation. In other words, it assumes that consumers continue to overestimate NGC prices to the same extent that they do today.

A11.65 In practice, we consider that the unbundled tariff is likely to both reduce the extent to which consumers overestimate prices and lead to a shift in demand through improving consumer confidence in NGCs. As explained above, the benefits to residential consumers of the reduction in price overestimation alone are likely to substantially exceed the resource costs of the unbundled tariff. Taking any shift in demand into account will reinforce this conclusion.

[317] The proportion of respondents that didn't know the price but thought these calls were expensive was 39% for fixed 0845 calls, 37% for fixed 0870 calls, 51% for mobile 0845 calls and 46% for mobile 0870 calls. 2011 Consumer survey, questions GL01X: and GL01Y: "Which of the following statements best describes what you know about the cost of calling a number starting with xxx from your landline/your mobile?"

[318] 2011 Consumer survey, questions 39 and 41.

[319] See paragraph 13.54, particularly footnote 724.

A11.66 Overall, taking into account the impact on stakeholders more widely (including consumers other than residential callers), we consider, as we did in the previous consultation, that there are additional positive effects that are not incorporated in the above modelling (as discussed above). Taking these additional effects into account reinforces our view that the benefits of the unbundled tariff are likely to outweigh the resource costs.

Stakeholder comments on 09 and our response

A11.67 EE made several comments about the 09 number range. It noted that the same Ofcom survey respondents who overstated 084/087 prices understated the price of 09 calls. EE considered that these directionally opposite results for 084/087 and 09, taken together, contradicted Ofcom's assumptions of market failure and purported damage to the overall non-geographic number brand as a result of lack of price awareness. EE also noted that consumers under-estimated the price of calls to 09 numbers by a greater margin than the amount by which consumers over-estimated the price of 084/087 calls.[320]

A11.68 EE also argued that Ofcom's research and analysis indicated that there would be a reduction in demand for calls to 09 numbers, as unbundling was expected to correct current customer price under-estimations of the cost of calls to 09 numbers. It argued that Ofcom should properly reduce the financial value of the benefits predicted to be gained from an uplift in 084/087 and 080 call volumes by the equivalent financial value of the predicted level of reduction in calls to 09 numbers.[321]

Ofcom's response

A11.69 On EE's first point, we accept that the Consumer surveys suggest that consumers underestimate the price of 09 numbers overall. We also accept that consumers underestimate the price of 09 calls by a greater absolute margin than the amount by which they overestimate the price of 084/087 calls on mobiles. However, as illustrated in Table A11.13 below, this is not the case for fixed calls. The absolute margin of overestimation for fixed 084/087 prices is in fact significantly higher than the absolute margin of underestimation of fixed 09 prices – at least two thirds larger and, for 0870 calls, over double the size.

[320] EE, April 2012 consultation response, p8.
[321] EE, April 2012 consultation response, p13.

Table A11.13: Consumers' absolute and % over/underestimation of NGCs

	Fixed				Mobile			
	Mean expected price (2009, £pm)	Avg actual price inc. VAT (2009, £pm)	Absolute difference between actual and expected price	% over/ under-estimation	Mean expected price (2009, £pm)	Avg actual price inc. VAT (2009, £pm)	Absolute difference between actual and expected price	% over / under-estimation
0843/4	0.30	0.05	0.25	500%	0.46	0.21	0.25	119%
0845	0.30	0.05	0.25	500%	0.46	0.22	0.24	109%
0870	0.39	0.08	0.31	388%	0.51	0.20	0.31	155%
0871	0.39	0.13	0.26	200%	0.51	0.34	0.17	50%
09	0.70	0.85	0.15	21%	0.70	1.13	0.43	38%

Source: expected prices originate from the 2009 Consumer survey, actual prices are calculated using the 2010 Flow of Funds Study.

A11.70 Analysing the proportionate level of over or underestimation (i.e. the gap between actual and expected prices, divided by the actual price) shows that consumers' over estimation of 084/087 call prices, in percentage terms, is almost in all cases significantly higher than consumers' under estimation of 09 prices, in percentage terms. We consider that this is a more reliable metric for price over/underestimation as it is calculated relative to the actual price. This is because we would expect the strength of consumer response to a given difference between actual and expected prices to be greater the larger this difference is in relation to the actual price. For example, if the mean expected price of a 09 call was £5pm but the actual price was £6pm, the absolute difference between actual and expected prices (£1pm) would far exceed the difference between the actual and expected prices of 084/087 calls. Yet, it is likely that the impact of consumers' incorrect expectations regarding 09 prices in this example would be smaller than the impact of their expectations regarding 084/087 prices because the difference, in percentage terms, between £5 and £6 is smaller and, for a given degree of price sensitivity, the impact on volumes will be greater the larger the percentage change in price.[322]

A11.71 Therefore, while we accept that the consumer surveys suggest that consumers overall significantly under-estimate the price of 09 calls, we consider that the absolute margin by which they do so is not the most appropriate measure of over or underestimation in this context.

A11.72 In the light of EE's comments, we have re-considered the available evidence on consumer's expectations of prices for both 08 and 09. In order to increase our understanding of the situation on 09 calls and its implications for our conclusions, we have considered:

[322] We recognise that, for some assumptions about the nature of demand (e.g. linear demand), the degree of price sensitivity (or elasticity) increases with price. In this context, it is still appropriate to consider the volume response in relation to the percentage price increase but assuming a higher value for the degree of price sensitivity.

- the possible reasons why consumers underestimate 09 prices;
- the possible reasons why the price awareness of 09 callers may be misrepresented by results of the consumer surveys; and
- the potential implications for introducing the unbundled tariff to the 09 number range.

Why would consumers underestimate 09 prices?

A11.73 Consumers call 09 numbers for more discretionary services including competitions, TV voting lines, scratch cards, adult entertainment, chat lines and some post-sales services such as technical support (see paragraph 2.4 of the April 2012 consultation). Few people call these numbers – according to Q25 of the 2010 Consumer survey, only 20% of fixed and 8% of mobile consumers ever call 09 numbers. This is in contrast with 0845/0870 numbers for example, where 67% of fixed consumers and 23% of mobile consumers ever call these numbers. A very small and statistically insignificant number of consumers call 09 numbers regularly (i.e. every week) and only 4% of fixed and 1% of mobile consumers call them sometimes (i.e. every month).[323] The fact that very few consumers call these numbers regularly may explain why consumers in general have poor awareness of the price of 09 calls. However, it does not specifically explain why they would underestimate (rather than overestimate) 09 prices.

Possible reasons why the price awareness of 09 callers may be misrepresented by the results of the consumer surveys

A11.74 We consider that the consumer surveys may not give an accurate picture of 09 callers' perceptions of the price of calling these numbers because the results could be biased by respondents who never call 09 numbers.

A11.75 We have analysed the consumer survey evidence in detail to investigate whether or not the price awareness of 09 callers is accurately represented by the results. Two questions, asked specifically of the 09 range, were relevant:

- Q43/44 of the 2009 consumer survey: "How much do you think it costs to call the following types of telephone numbers from your landline/mobile phone at home during the daytime on a weekday?"; and
- Q21/25 of the 2010 consumer survey: "How often do you make calls to the following numbers from your landline/mobile phone?"

A11.76 Unfortunately because these questions were asked in different consumer surveys, we were unable to cross-tabulate the responses.[324] However, if we were to assume that the calling practices of the population remained the same between 2009 and 2010, the finding that 09 callers underestimate prices may not be correct. This is because, as set out above, responses to Q21/25 of the 2010 consumer survey indicated that only 20% of fixed and 8% of mobile callers ever call 09 numbers (base size was 925 and 1091 respectively). However, responses to Q43/44 of the

[323] 2010 Consumer survey, Q25: "How often do you make calls to the following numbers from your fixed line/mobile phone?"

[324] In other words, we were unable to reliably match responses from one question to the other. This would be necessary in order to understand the calling patters of those with particular expectations of the price of 09 calls.

2009 consumer survey indicated that 28% of fixed and 29% of mobile callers responded by stating their expected price (base size was 979 and 1102 respectively). The vast majority of remaining respondents stated that they did not know the price. This suggests more people answered the question regarding expectations of 09 prices than actually call 09 numbers. It is therefore possible that the survey results are, to some extent, biased by those respondents who never call 09 numbers and are thus significantly more likely to have poor price awareness.

A11.77 The inclusion of those who never call 09 numbers would not matter for our survey results if we had no reason to believe there was any systematic difference in the perception of 09 prices by those who call 09 numbers and those who do not. However, we consider the price expectations of those who do not call 09 numbers are likely to differ from those who do and that including those who do not call 09 numbers in the sample may therefore have biased the results for this question. In the first instance, this is because consumers who call 09 numbers may have seen the total cost of these calls on previous bills and therefore have a better awareness of 09 prices than those who have never called an 09 number. In addition, there are specific features of the 09 number range that lead us to expect 09 callers to be relatively price aware in comparison to 08 callers. In particular, PhonepayPlus regulation means that 09 SPs must include price information in all promotional material in close proximity to the 09 number used to access the service. This regulation only applies to 0871/2/3 numbers on the 08 range. In terms of securing price transparency, this information has certain limitations (as discussed elsewhere in this document). Nonetheless, as set out in paragraph A11.62, we would expect about two-thirds of 09 callers to have had this information in front of them at the point of call and therefore to have some understanding of the likely cost of the call.

A11.78 We have also considered whether a similar source of bias could arise on other number ranges. We found this was not true for fixed calls to 0845/0870 numbers but may be true of mobile calls to 0845/0870 numbers. In particular, responses to Q21/25 of the 2010 consumer survey indicate that 67% of fixed and 23% of mobile callers ever call 0845/0870 numbers. Responses to Q43/44 of the 2009 consumer survey indicated that 53% and 42% of fixed callers of 0845 and 0870 numbers (respectively) and 48% and 43% of mobile callers of 0845 and 0870 numbers (respectively) responded by stating their expected price (as above, the majority of remaining respondents stated that they did not know the price). This suggests that fewer fixed callers provided their perception of the price of 0845/0870 calls than indicated they ever call these numbers. As a result, we would expect the perceived price estimate to be relatively reflective of those who actually call 0845/0870 numbers from a fixed line. However, it also suggests that more mobile callers stated the price of 0845/0870 calls than reported ever calling these numbers.

A11.79 This suggests that the consumer survey finding of mobile price overestimation on 0845/0870 number ranges may be influenced by those that never call 0845/0870 numbers from a mobile (in a similar way as for 09 in general above). However, we have less reason to believe that the inclusion of these responses would bias results than the inclusion of non-callers on 09 because we do not think it as likely that those who call 0845/0870 numbers are significantly better informed than those who do not. Whilst they will have been exposed to the cost of calls on previous bills, the PPP regulation which secures greater price transparency on the 09 number range does not apply to services provided on 0845/0870.

A11.80 Furthermore, we think the price expectations of those who do not currently make 0845/0870 calls from mobile are more relevant to our analysis than the price expectations of those who do not call 09 numbers. This is because we consider it likely that a material proportion of those respondents who do not call 0845/0870 numbers from their mobile are being deterred as a result of perceived high prices or poor price awareness. This is in contrast to 09, where we consider it likely that many users simply do not need or want to call these numbers. We note that calls to 0845/0870 tend to be less discretionary than calls to 09 by virtue of the services located on these number ranges and, as a result, it is not the case that very few customers call 0845/0870 numbers overall. Indeed, according to the 2010 Flow of Funds study, 084 and 087 calls accounted for 61% of the total NGCs in 2009 (compared to just over 1% for 09 calls). In contrast to 09, a relatively high proportion of respondents (67% of fixed callers, as discussed in paragraph A11.73 above) indicated that they call 0845/0870 numbers from a fixed line. As the majority of mobile callers will also have access to a fixed line, it is likely that a material proportion of those who do not make 0845/0870 calls from their mobile do make these calls from a fixed line. These respondents are already making 0845/0870 calls, and so it is more likely they are being deterred from making mobile calls to these numbers by their poor price awareness rather than a lack of need.

A11.81 In summary, we consider there is reason to believe that the overall result from our consumer surveys on perceptions of 09 prices may be biased by the inclusion of price perceptions of consumers who never make 09 calls. There is some potential for a corresponding bias in the estimate of consumers' price perception of 0845/0870 calls from mobiles but we consider that the extent of any bias is likely to be smaller (because there may be less difference in price perceptions between callers and non-callers for 0845/0870 compared to 09). Moreover, we consider the price expectations of those who currently do not make 0845/0870 calls from mobile are more relevant to our analysis as a possible source of consumer detriment as they are more likely to be deterred from making calls by a lack of price awareness than a lack of need (compared to those who do not call 09).

The implications for unbundling the 09 range

A11.82 Due to the uncertainty about how to interpret evidence regarding consumer price expectations of the 09 number range described above, before reaching our conclusions on the effect of unbundling the 09 range we consider, for completeness, the impact of unbundling the 09 number range under three different scenarios:

- 09 callers overestimate the price of 09 calls;
- 09 callers have fairly accurate price expectations; and
- 09 callers underestimate the price of 09 calls.

A11.83 Before we analyse these scenarios, we consider the incremental implementation costs of implementing the unbundled tariff in 09, assuming that the unbundled tariff will be implemented in the 084/087 number ranges. This is to enable us to carry out a more focused assessment of the costs and benefits of the unbundled tariff on the 09 range. We adopt this analytical approach because we have concluded that the unbundled tariff should be implemented in the 084/087 number ranges due to the expected net benefits, as discussed above.

The incremental cost of unbundling the 09 number range

A11.84 In Section 13 of the April 2012 consultation, we set out detail on the resource costs associated with the unbundled tariff, in the light of our proposals for the 0845/0870 ranges and for the structure of the AC and SC. We considered that the following costs applied:

- the cost of changes to OCPs' billing systems;
- costs for SPs of migrating their non-geographic numbers; and
- costs for OCPs and TCPs of communicating the new unbundled pricing regime to their customers.

A11.85 In this assessment, we assume that the unbundled tariff will already be applied to the 084 and 087 number ranges. In light of this, many of the necessary steps to implement the unbundled tariff will already have been put in place but there may be some incremental costs associated with applying the unbundled tariff to the 09 number range. For example, OCPs will have to alter their billing systems in order to apply the unbundled tariff to 09 calls (as well as 084/087 calls) and will also have to make it clear to customers that the 09 number range will also be unbundled. Similarly, TCPs will have to communicate with 09 SPs to inform them that the 09 price points will also be changing. Finally, some 09 SPs may migrate away from the 09 range if they are unhappy with the new pricing arrangements (the second bullet point above).

A11.86 We consider that some of these incremental costs will be material whilst others will not. We consider that the following incremental costs of unbundling will be low:

- OCPs' incremental billing costs – once OCPs have upgraded their billing systems so that they can apply the unbundled tariff to the 084/087 number ranges, the incremental up-front costs of adjusting the system to allow 09 calls to be charged in the same way are likely to be low. Ongoing billing costs may be higher given that the inclusion of the 09 range necessitates a higher number of SC price points, and specifically will need SC price points at much higher rates than 084/087 numbers (see the discussion in Annex 21 and Annex 10 in respect of the costs of a higher number of SC price points). However, as we discuss in Annex 10 the impact of a higher number of price points appears to affect only a certain number of CPs (e.g. larger fixed CPs's billing systems can already handle a large number of price points) and therefore any additional incremental ongoing billing costs of including 09 will be limited to those particular CPs. In addition, given that our estimates of the overall up-front costs of implementing the unbundled tariff are significantly larger than our ongoing costs estimates, the specific incremental ongoing billing costs of implementing the unbundled tariff on 09 are likely to be relatively low;
- OCPs' incremental communication costs – as we are assuming that the 084/087 number ranges will be unbundled, we assume that the incremental cost of OCPs informing consumers that the new tariff structure will also apply to the 09 number range will be low.
- SPs' migration costs – some SPs currently operating on the 09 range may choose to migrate to other number ranges if they are not satisfied with the

unbundled tariff. However, we do not consider this will apply to many SPs as few number ranges offer similar revenue share opportunities to the 09 range.[325]

A11.87 As regards TCPs' costs of communicating with SPs, the unbundled tariff represents a significant change in how NGC prices are presented. Consequently, TCPs will have to communicate with 09 SPs to inform them that the 09 price points will be changing. In paragraphs 13.27 to 13.35 of the April 2012 consultation, we discussed the evidence we received from TCPs regarding the magnitude of these costs they expect to face taking into account calls to 084, 087 and 09 numbers. We estimated that the total cost of TCPs having to communicate with SPs was in the range of £3.6m to £4.8m. These have subsequently been updated (see Annex 10 so that we now estimate a range of £1.5m - £2.0m. These costs are dependent on the number of SPs that TCPs have to communicate with. Therefore, in order to estimate the costs that should be attributed to 09 numbers, we have made an assumption about the share of 09 SPs as a proportion of all SPs operating on the number ranges we are proposing to unbundle (084, 087 and 09). In order to do this, we have gathered the following information:

- BT has told us that they have [✂] customers (i.e. SPs) with their AgileMedia business (which is largely made up of customers on the 09 range) whereas they had [✂] SPs with their Inbound Contact business (which is primarily on 08 numbers); and

- PPP has told us that the number of different providers who have registered a 09 number with them since April 2011 is around 1,000. As SPs are required to register with PPP on an annual basis, this should provide a relatively accurate estimate of the number of 09 SPs.

A11.88 Dividing BT's estimate of the number of 09 SP customers hosted on its network by its estimate of the total number of 08 and 09 SPs hosted on its network suggests that 09 SPs account for less than 1% of the total number of SPs on the 08 and 09 ranges. A similar figure is obtained by first scaling up BT's estimate of the total number of SPs hosted on its network by our understanding of its approximate market share (25%) to estimate the total number of 08/09 SPs and then dividing the estimate from PPP of the total number of 09 SPs by this estimate of the total number of 08/09 SPs. Applying this proportion to the upper bound of TCP communication costs suggests that the incremental communications costs of unbundling 09 for TCPs is approximately £0.02m. This implies that the incremental benefits of applying the unbundled tariff to the 09 number range would not have to be particularly large in order for the decision to be justified.

A11.89 As set out above, we now consider the impact of unbundling the 09 number range under three different scenarios.

09 callers overestimate the price of 09 calls

A11.90 We have seen no evidence to suggest that 09 callers overestimate the price of 09 calls. However, given the uncertainty over how to interpret the consumer survey evidence on 09, we consider this scenario for completeness but place less weight on our conclusions under this scenario.

[325] In light of this, we do not consider that the misdialling costs (costs that were not initially estimated in the April 2012 consultation but are estimated in this document – see Annex 10) that may result from implementing the unbundled tariff in the 09 number range are likely to be significant either.

A11.91 If 09 callers overestimated the price of 09 calls, as is the case for most callers of 08 numbers, we consider that implementing the unbundled tariff in the 09 number range would reduce 09 callers' price overestimation and uncertainty and prompt an increase in 09 calls. Given the relatively small incremental implementation costs of unbundling the 09 range, the threshold increase in demand for 09 calls in order for the benefits of unbundling to outweigh the costs would not have to be very large at all. Therefore, we consider that the impact of unbundling the 09 range if 09 callers overestimated the price of 09 calls is likely to be positive.

09 callers have fairly accurate price expectations

A11.92 We set out our reasoning as to why 09 callers are likely to have fairly accurate price expectations in paragraph A11.77 above. In light of this evidence, we consider that this is a plausible scenario and so we place significant weight on our conclusions from this scenario.

A11.93 If 09 callers have relatively good awareness of 09 prices, the motivation for implementing the unbundled tariff on the 09 range is less obvious. If we assume that 09 callers currently have a good understanding of 09 prices, then implementing the unbundled tariff would only have a limited impact on price awareness and it is questionable whether any additional 09 calls would be made as a result. However, we consider that there are a number of benefits of unbundling 09 that are not captured by the model:

- SPs will be able to present a much clearer price point than they do currently via the SC. This will allow them to compete with other SPs over the price of their services more easily and could lead to reduced prices for consumers; and
- the unbundled tariff will reduce the impact of the vertical externality because SPs will have greater control over the prices they set for 09 calls.

A11.94 In addition, implementing the same remedy consistently across NGC number ranges (apart from 080) will help to improve consumers' general understanding of these numbers. Applying a different remedy to 09, as well as for 080 numbers, risks complicating pricing and confusing consumers as well as increasing costs for industry.

A11.95 The combination of these factors is likely to lead to consumer benefits in the form of a more efficient pattern of prices and greater level of service quality, variety and innovation. These effects are difficult to quantify robustly but are potentially material nonetheless. Overall, we consider that these benefits will plausibly outweigh the incremental implementation costs of unbundling the 09 number range, especially because these costs are likely to be low.

09 callers underestimate the price of 09 calls

A11.96 Under this assumption, EE's comments (set out in paragraph A11.67 to A11.68 above are relevant. If 09 callers underestimate the price of 09 calls, we accept that a reduction in price underestimation, brought about by the unbundled tariff which will improve consumers' price awareness, is likely to lead to a fall in the volume of 09 calls. While we would expect a correction in consumers' expectations of 09 prices to yield some benefits (through a reduction in overconsumption), we accept that there may also be some costs to OCPs, TCPs and SPs as a result of this reduction in volume. Consequently, we have modelled the effects of the unbundled tariff on the 09 range in isolation in order to investigate the overall net effect on consumers.

A11.97 We have divided this sub-section into the following parts:

- adjustments to the previous model;
- basic model framework;
- detailed analysis of one of the effects of unbundling the 09 range;
- quantified assessment;
- modelling assumptions;
- results of quantified assessment;
- additional considerations and illustrative example; and
- summary of conclusions.

Adjustments to the previous model

A11.98 As described above, the model that we used in the previous consultation (described in detail in Annex 16 of the April 2012 consultation) estimated the effects of the unbundled tariff for fixed and mobile calls to each of the following number ranges: 0843/4, 0845, 0870, 0871/2/3 and 09. As set out in paragraphs A16.82 to A16.85 of the April 2012 consultation, we recognised that consumers under-estimated the price of 09 calls and modelled the benefits to residential callers of a reduction in price underestimation. However, we implicitly and incorrectly assumed that OCPs, TCPs and SPs were impacted in the same way as they would have been as a result of reduced price overestimation.

A11.99 Consequently, our first step has been to remove 09 from the previous calculations. This in itself has resulted in minor changes to the initial threshold estimates presented in the April 2012 consultation. Our updated threshold estimates are presented in Tables A11.7 and A11.8 above, which capture the effect of a number of changes to our assumptions since the initial estimates were published in April 2012 in addition to the removal of 09. The second step has been to model the impact of the unbundled tariff on the 09 number range in isolation. Our approach to this, as well as the results, are set out in detail below.

Basic model framework

A11.100 We have adopted the same broad methodology as that used in Annex 16 of the April 2012 consultation. In the specific case of 09 calls, we consider that the unbundled tariff will improve consumer price awareness and this will lead to two opposing effects:

- **Effect 1** - consumers' price underestimation will be reduced which will lead to less over-consumption of 09 calls. This will reduce the volume of 09 calls; and
- **Effect 2** – unbundling 09 in addition to unbundling 08 will serve to simplify the pricing message for all NGCs and contribute to a gradual increase in trust in the 09 number range and, as a result of this increased confidence, we expect there

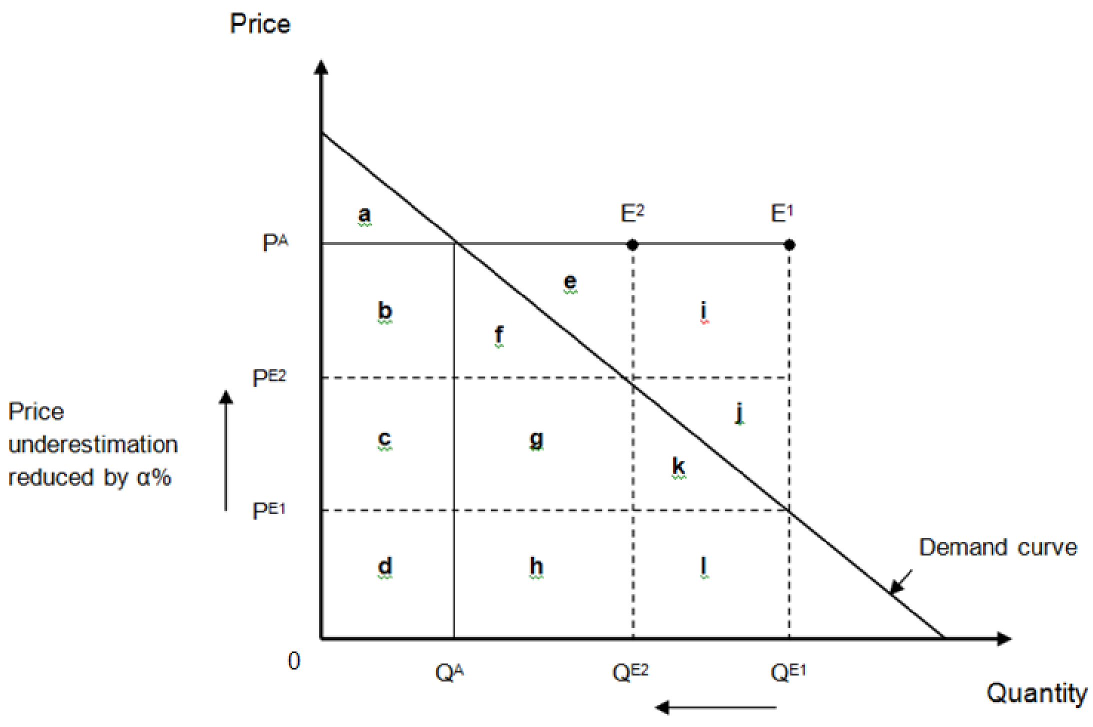
to be an increase in the volume of 09 calls. In contrast, implementing the unbundled tariff on a specific set of number ranges, i.e. 084/087, whilst leaving out others, i.e. 09, may contribute to tariff complexity and confusion.

A11.101 Similar to the model we used in the April 2012 consultation and continue to use to measure the impact of the unbundled tariff on the 084/087 number ranges (referred to hereafter as the '084/087 model'), there are a number of effects that we have not modelled (see paragraphs A16.102 to A16.111 of the April 2012 Consultation):

- the impact of a change in 09 call prices;
- vulnerable consumers' access to socially important services - not only is it difficult to attach a monetary value to this effect, as in the 084/087 number ranges, but we also do not consider that access to socially important services is provided via 09 numbers; and
- the impact of SPs migrating away from the 09 range. In practice this is likely to be limited due to the lack of availability of suitable alternatives to the 09 range. No other number range offers the opportunity for SPs to earn comparable levels of revenue. In addition, whilst the internet may provide some level of substitutability and has done in recent times, we consider it likely there is a core of services that will continue to rely on contact over the phone.

A11.102 We have used diagrams to illustrate effects 1 & 2 described above in Figures A11.14 and A11.15 below.

Figure A11.14 – unbundling leads to a reduction in 09 calls (Effect 1)

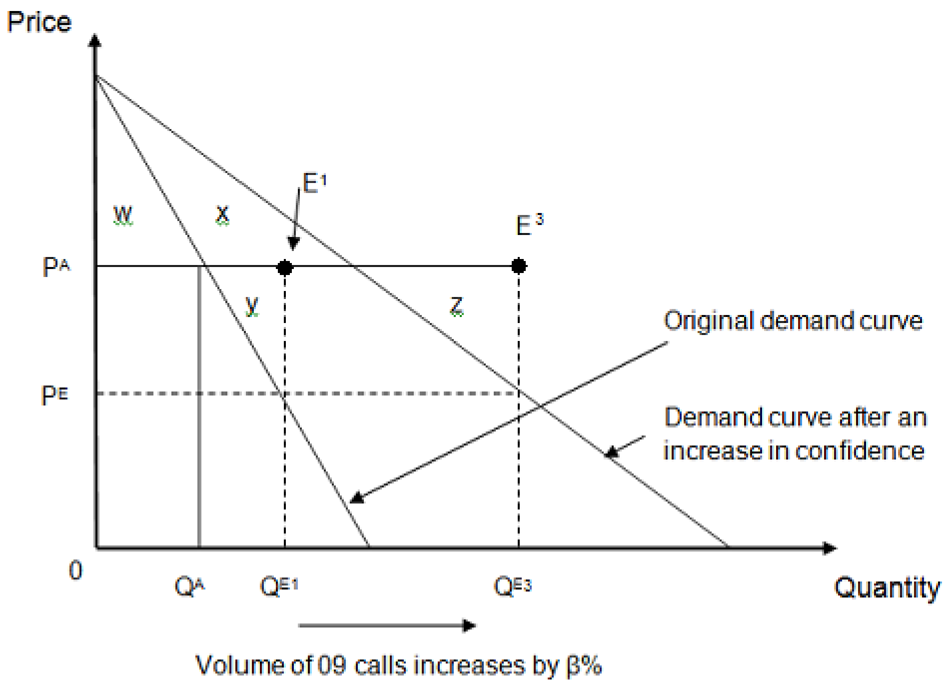


A11.103 Figure A11.14 presents a stylised illustration of the demand for 09 calls. In this diagram, under the status quo, consumers believe the price of NGCs to be P^{E1} and therefore demand quantity Q^{E1}. However, the actual price of NGCs is P^A. Therefore consumers are at point E^1 in Figure A11.14 and are making too many NGCs.

Consumer surplus is equal to the area **a** minus area **e+i+j**. Assuming, for simplicity in the diagram, that there are no costs to OCPs, OCP revenue is equal to the square $P^{A}E^{1}Q^{E1}0$.

A11.104 Under the unbundled tariff, consumer price perceptions are likely to become more accurate. In the stylised diagram above, we assume consumer price expectations improve by α% so that the average expected price of an 09 call moves to P^{E2}, i.e. closer to the actual price (which is assumed to be unchanged). At this level, consumers make Q^{E2} minutes of 09 calls and are at point E^{2} in the diagram in Figure A11.14. They continue to make too many NGCs but the degree of over-consumption has been reduced and so consumer surplus is larger (now equal to the area **a** minus area **e**). OCP revenue is smaller (the square $\mathbf{P^{A}E^{2}Q^{E2}0}$). The overall gain for consumers is equal to **i+j** whilst the loss in revenue to OCPs is equal to the area **i+j+k+l**.[326] The net impact of these two effects on consumers is uncertain and is discussed in further detail below.

Figure A11.15 – unbundling leads to an increase in 09 calls (Effect 2)



A11.105 Figure A11.14 is a stylised illustration of the benefits we expect the unbundled tariff to have on confidence in NGCs as a whole, and therefore the improvement in demand for 09 calls. The 'original demand curve' represents demand for 09 calls without unbundling of 09 calls (but with unbundling of 084 and 087 number ranges). In this scenario, consumers believe the price of a 09 call is P^{E} and therefore demand Q^{E1} minutes of calls to these numbers. However, the price that consumers actually pay is P^{A} and so consumers are at point E^{1} on the diagram in Figure A11.15.[327] At this point, consumer surplus is equal to the area w-y.

[326] The producer loss in the diagram only captures the loss in revenue as a result of reduced 09 call volumes. It does not include the other costs of unbundling (which are discussed below).
[327] Note that point E^{1} in this diagram is the same as point in E^{1} in diagram A11.14 above. Both points signify the situation under the status quo for 09 but assuming the unbundling of 084 and 087 number ranges is already in place. Point E^{2} in diagram A11.14 and point E^{3} in diagram A11.15 signify the

A11.106 Introducing the unbundled tariff leads to an outward shift in the demand curve, so that consumers wish to make more NGCs even if the actual and/or expected price does not change (the new demand curve is labelled 'demand curve after an increase in confidence'). Consumers' expected price remains at P^E but the volume of NGCs demanded at that price is now at Q^{E3}. Consumers are at point E^3 in the diagram in Figure A11.15 with consumer surplus of area **w+x-z**. The gain in consumer welfare of the unbundled tariff is therefore equal to the area **x+y-z**.

A11.107 Our interest is in the overall impact on consumer welfare. We would be concerned if, overall, consumers were worse off as a result of unbundling the 09 range. In order to understand whether this is likely to be the case, we have explored the various different impacts of the first effect in detail. This is because there are both positive and negative impacts of this effect (i.e. a direct gain in consumer welfare but a reduction in producer surplus that may, as discussed below, lead to harmful effects for consumers) and thus the overall effect on consumer welfare is unclear. In contrast, the overall impact of the confidence effect on consumer welfare is always positive. Once we have completed our assessment of the first effect, we discuss the second effect qualitatively in order to obtain an indication of the overall impact on consumers of unbundling the 09 number range.

Detailed analysis of 'Effect 1'

A11.108 Table A11.16 below identifies the various costs and benefits of the first effect of unbundling 09 for consumers, OCPs, TCPs and SPs. Note that the diagram above only captures some of the benefits and costs considered below (for example, the diagram does not capture billing, communication or migration costs).

Table A11.16 – the different impacts of reduced 09 price underestimation as a result of unbundling

	Consumers	OCPs	TCPs	SPs
Benefits	**B1: reduced over-consumption**	-	-	-
Costs		C3: incremental billing costs	**C5: cost of communicating with 09 SPs**	C7: migration costs
		C4: incremental communication costs	C6: fall in profits due to reduced volumes	*Fall in profits due to reduced volumes*
	C1: higher prices passed on to consumers via the TPE	*Fall in profits due to reduced volumes*		
	C2: reduced service availability and innovation			

impact on this initial situation for 09 as a result of the two modelled impacts of unbundling the 09 range.

A11.109 In summary, consumers benefit from improved price awareness which allows them to make better call decisions. As a result, they will make fewer 09 calls and therefore their over-consumption will be reduced (Benefit B1).

A11.110 On the other hand, costs incurred by various producers will flow back to consumers via different mechanisms. For example, OCPs will lose profits as they make a margin over incremental costs on every 09 call originated on their network (this effect is captured in simplified form by Figure A11.14 above). As a result, they may increase the price they charge consumers for other services via the tariff package effect (TPE) (Cost C1). Similarly, SPs will lose profits as a result of consumers calling their services less. This may harm consumers because SPs may respond by investing less in service quality and availability (Cost C2). TCPs will also experience a reduction in profits as a result of a reduction in the volume of 09 calls (Cost C6), although the mechanism for a consequential negative impact on consumers is less clear.

A11.111 In addition, OCPs, TCPs and SPs will incur costs of implementing unbundling on the 09 number range which are discussed in greater detail in paragraphs A11.84 to A11.89 above.

A11.112 In our assessment of whether Effect 1 – i.e. a reduction in 09 calls due to reduced price underestimation – has a positive or negative effect on consumers, we have focussed on benefit B1 and costs C1, C2 and C5 (i.e. those highlighted in Table A11.16 above). We do not place significant weight on costs C3, C4, C6 and C7 on the basis that we consider they are likely to be insignificant:

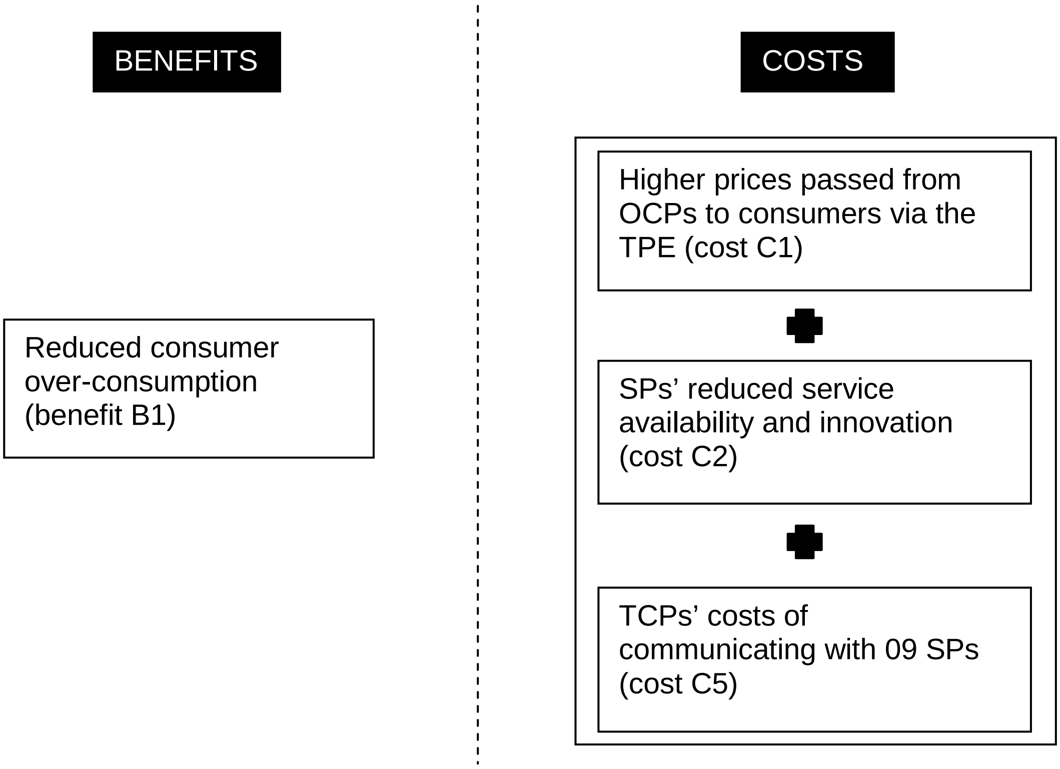
- we discuss why we consider costs C3, C4 and C7 to be immaterial in paragraph A11.86 above; and

- TCPs' reduced profits (cost C6) – TCPs will suffer a reduction in profits from fewer 09 calls but it is not clear via what mechanism this cost would flow back to consumers. In cases such as the reduction in OCP profits, consumers are likely to suffer from higher prices via the tariff package effect. BT has previously raised the possibility of a similar effect by TCPs but we consider that there does not seem to be a causal link between higher TCP revenues and subsidised NGC origination.[328]

A11.113 For clarity, Figure A11.17 sets out the offsetting costs and benefits on which we have placed weight.

[328] As discussed in paragraph A10.77 of the April 2012 consultation.

Figure A11.17 – the costs and benefits of reduced 09 price underestimation caused by unbundling



<u>Quantified assessment</u>

A11.114 While we have been able to quantify the benefits of implementing the unbundled tariff in the 09 range in terms of reduced over-consumption, we have been unable to quantify all of the costs. Specifically, we have not been able to quantify the impact on SPs of 'reduced service availability and innovation' as this is difficult to model – it is unclear exactly how SPs' loss of revenue would impact on service provision and their propensity to innovate and it is also unclear how these costs would feed through to consumers. We did not try to quantify this effect in the April 2012 consultation but instead assessed it qualitatively. Consequently, we adopt the same approach in our 09-specific modelling.

A11.115 In terms of the other costs and benefits of unbundling the 09 number range, these have been quantified:

- reduced consumer over-consumption (benefit B1) – using revenue and volume data from the 2010 Flow of Funds study and data on consumer price expectations from the 2009 Consumer Research, we have estimated the consumer benefit of reduced over-consumption of 09 calls for a given level of improvement in the accuracy of their price expectations (i.e. α% in Figure A11.14 above);

- higher prices passed on to consumers via the TPE (cost C1) – we have calculated the loss in OCPs' profits from 09 calls using estimates of the average ACs and incremental costs of fixed and mobile NGCs used in the April 2012 consultation modelling (see Table A16.4). Consistent with the approach in the previous consultation, we have then multiplied this by 0.8 (see paragraph A16.40 and footnote 19 of Annex 16 of the April 2012 consultation) as an illustrative assumption to account for the likelihood that the tariff package effect is incomplete;[329] and

- TCPs' costs of communicating with 09 SPs (cost C5) – our approach to estimating these costs is set out in paragraphs A11.87 and A11.88 above.

Modelling assumptions

A11.116 We have made a number of assumptions in our modelling of the costs and benefits of unbundling the 09 range (under the assumption that consumers underestimate the price of 09 calls). Generally, for simplicity, we adopt the same assumptions that we have adopted in the base case of our 084/087 model:

- time horizon;
- discounting and the treatment of TCPs' implementation costs;
- the annual trend in NGC volumes;
- the timing of when the benefits of unbundling will be fully realised;
- actual and expected prices;
- quantities;
- own price elasticity of making 09 calls; and
- the demand function.

A11.117 We now look at each of these in turn.

Time horizon

A11.118 The unbundled tariff will produce a stream of annual benefits for consumers and some one-off and some annual costs for producers. Therefore, as in the April 2012 consultation, we have modelled costs and benefits over a ten year period (see paragraph A16.46). As set out above, we assume that the unbundled tariff will be implemented in 2014 and thus account for the fact that 09 volumes decline by 10% per year until the unbundled tariff is implemented.

Discounting and the treatment of TCPs' implementation costs

A11.119 In line with the discussion above in paragraph A11.54, we are using a discount rate of 3.5%.

A11.120 In terms of the implementation costs – in this case, TCPs' costs of communicating with SPs – we have used the 'Spackman' approach to discounting, as discussed in paragraph A11.55.

[329] For the same reasons described in paragraphs A11.50 to A11.53 in relation to the 084/087 modelling, we have not reduced OCP profits by (the incremental) annual billing costs associated with implementing the unbundled tariff (on the 09 range).

The annual trend in NGC volumes

A11.121 Consistent with our approach in the 084/087 model, we assume that 09 volumes decline by 10% per year before 2014 and at 7.5% per year after unbundling has been implemented.

The timing of when the benefits of unbundling will be fully realised

A11.122 Consistent with our approach in the 084/087 model, we account for the fact that the full benefits of the unbundled tariff may not be realised immediately. It is unclear whether the impact of the unbundled tariff on consumers' tendency to underestimate 09 call prices and the volume of 09 calls made will be immediate or whether the effect will be more gradual. We have adopted the same assumptions that we applied in the 084/087 model, as set out in paragraphs A16.53 and A16.54 of the April 2012 consultation. For simplicity, we use our base case assumptions about the timing of benefits – i.e. we assume that only 50% of the benefits of unbundling are realised in year 1, 75% in year 2 and then 100% thereafter.

Actual and expected prices

A11.123 In order to calibrate the demand curves, we have used data on actual and expected call prices for residential consumers. As in the previous consultation, we used figures from the 2009 Consumer survey to obtain average (mean) expected prices for the 09 number range. We obtained estimates of actual prices by dividing OCP revenues by the volume of 09 calls (obtained from the 2010 Flow of Funds study). Note that the revenue figures in the 2010 Flow of Funds study exclude VAT. Thus, in order to estimate the average retail price that consumers actually pay, we have added VAT at 20% (consistent with our approach in the 084/087 model). We have converted these prices into 2014 levels applying assumptions about inflation as set out in Table A11.14 above.

A11.124 In the 084/087 model, we noted that the revenue figures in the 2010 Flow of Funds study include revenues for both residential and business calls. On average, business calls to non-geographic numbers are likely to be cheaper than residential calls to these numbers. Therefore, we needed to make an adjustment to the average (business and residential) figures in the 2010 Flow of Funds study, to avoid underestimating the price of residential calls. However, as we assume that most 09 calls are residential[330], we have not seen the need to apply the same adjustments as we did in the 084/087 model.

Quantities

A11.125 As in the April 2012 consultation, we used data on fixed and mobile call volumes taken from the 2010 Flow of Funds study. As above, we have not applied a downlift because we assume most 09 calls are made by residential callers. Therefore, we consider it appropriate not to adjust the Flow of Funds reported volumes to remove business calls.

Own price elasticity of making 09 calls

[330] This assumption is supported, to some extent, by our understanding that businesses often block 09 calls from their phones (e.g. to stop their employees calling expensive chatlines).

A11.126 In the April 2012 consultation, we assumed an average value for the own price elasticity of NGCs of -0.3 for the purposes of our impact assessment.[331] However, in the specific case of 09 calls, we have assumed that the elasticity is higher at -0.5 for the purposes of our impact assessment.[332] This is to reflect the fact that the nature of services hosted on the 09 number range means 09 calls may be more discretionary than calls to other NTS number ranges. As far as we are aware, there have been no studies that reliably quantify the own price elasticity of 09 calls (or of NGCs more generally). However, we consider that -0.5 is sufficiently higher than the assumption we make with respect to 084/087 calls to reflect the potentially more discretionary nature of 09 calls, but at the same time sufficiently inelastic still to allow for the possibility that those consumers who do make 09 calls may have relatively few alternatives (reflecting the limited alternatives available to SPs on the 09 number range discussed above).

The demand function

A11.127 For simplicity we have assumed a linear demand curve. We consider this is conservative because this demand function yielded the most negative results in the April 2012 consultation.

Results of the quantified assessment

A11.128 The results of our calculations are set out in Table A11.18 below.

Table A11.18 – quantified net effect on consumer welfare of unbundling 09

Improvement in price awareness (α%)	Consumer benefit of reduced over-consumption (£m)	OCP loss passed on to consumers via the TPE (£m)	TCPs' costs of communicating with 09 SPs (£m)	Total (£m)
10%	3.00	-0.65	-0.02	2.33
20%	5.69	-1.30	-0.02	4.36
30%	8.05	-1.95	-0.02	6.08
40%	10.11	-2.59	-0.02	7.49
50%	11.84	-3.24	-0.02	8.58

A11.129 These results show that at any given level of improvement in the accuracy of consumers' price awareness (i.e. the reduction in price underestimation, depicted by α% in figure A11.14 above), the benefits of reduced consumer over-consumption are likely to outweigh the costs to OCPs (that are passed on to consumers via the TPE) and the costs incurred by TCPs of communicating with 09 SPs.

A11.130 As discussed above, there are other factors that need to be considered in order to complete a full assessment of the costs and benefits of implementing the unbundled

[331] In adopting this assumption, we noted that the thresholds calculated in the Impact Assessment were not intended to be precise but to help indicate the order of magnitude of benefits necessary for the unbundled tariff to have a net positive effect on consumers. We considered a value of -0.3 appropriate for this purpose, noting that this was consistent with the evidence we had seen on the extent of suppressed demand, stakeholder comments that demand for NGCs was inelastic and the approach we had previously taken in the 2005 NTS consultation and 0870 Statement. See paragraph A16.72 – A16.77 of the April 2012 consultation.

[332] Assuming a higher elasticity will increase the benefits to consumers from a reduction in overconsumption but increase the costs to producers through lower volumes.

tariff on the 09 number range. In particular, there is also a cost to SPs in the form of a reduction in profits from 09 calls. This loss may be passed on to consumers in the form of reduced service availability and quality, which, for reasons discussed above, is difficult to quantify robustly. It may also lead to the complete loss of some services as the reduction in SPs' profits may mean that some services become unprofitable. On the other hand, there may be increases in consumer confidence in the 09 range as a result of applying the same simplified pricing message to all non-geographic number ranges, which may lead to further 09 calls being made (referred to as Effect 2 above). This could lead to benefits for both consumers (the greater utility resulting from an increase in both the volume of calls and consumers' valuation of these calls) and producers (the increased revenues resulting from a greater volume of calls).

A11.131 Given the quantified results and prospect of benefits from improved consumer confidence, the costs to consumers of reduced service availability and innovation from the reaction by SPs to a reduction in 09 volume (because consumers are better informed) would have to be significant to outweigh these benefits. Whilst we cannot rule out this possibility, we do not consider that it is the most likely outcome. This accords with a general point that we would typically expect consumers to be better off as a consequence of making better-informed decisions.

Summary of Ofcom's analysis of the 09 range

A11.132 We have assessed the impact of the unbundled tariff on 09 callers assuming three different scenarios:

- Assuming that 09 callers overestimate the price of 09 calls, we consider that the impact of the unbundled tariff is likely to be positive overall. However, as discussed in paragraphs A11.90 and A11.91 above, we consider that this scenario is unlikely.

- Assuming that 09 callers are relatively aware of the price of 09 calls, we consider that the impact of the unbundled tariff is also likely to be positive overall-. As discussed above in paragraphs A11.92 to A11.95, we consider that this is a likely scenario.

- Assuming that 09 callers underestimate the price of 09 calls, we consider that the overall impact of the unbundled tariff is more likely than not to be positive given that the remedy is likely to improve consumer price awareness. In general, we expect consumers will be better off as a consequence of making better-informed decisions.

- We discussed in paragraphs A11.74 to A11.81 above why the results of the consumer surveys may misrepresent the price awareness of 09 callers. For these reasons, we consider the price underestimation scenario is less likely and so we place less weight upon our conclusions under this scenario than the scenario in which consumers are relatively well informed about the price of 09 calls.

A11.133 In summary, contrary to the results of the consumer surveys, we consider that it is more likely that 09 callers are relatively price aware than that they under estimate the price of 09 calls. On this basis, we consider that the impact of unbundling the 09 range is likely to be positive overall for consumers.

A11.134 In any event, we place significant weight on the benefits of applying the unbundled tariff consistently across both 084/087 and 09 number ranges. This is because we consider that applying separate remedies to different number ranges (on top of our separate treatment of 080 numbers) is likely to be less effective in addressing the problems of price complexity and lack of consumer price awareness experienced today, as well as the other problems we have identified in Section 4.

A11.135 In light of the changes to our assessment of the benefits of implementing the unbundled tariff on the 09 range, we believe it is appropriate to give stakeholders the opportunity to comment:

Q11.1: Do you agree with our assessment of the impact of implementing the unbundled tariff on the 09 range is likely to be positive overall? If not please explain why.

The benefits of making 080 and 116 calls free to caller

Introduction

A11.136 This section is structured as follows:

- summary of our position in the April 2012 consultation;
- stakeholder comments; and
- Ofcom's response.

Summary of our position in the April 2012 consultation

A11.137 We presented our impact assessment of the proposal for making 080 and 116 free to caller ranges in Section 16 of the April 2012 consultation. Unlike our proposals for the unbundled tariff (assessed in Section 13 of the April 2012 consultation), we did not conduct a quantified assessment of the benefits of the various policy options against the potential costs for these ranges. In paragraph A16.259 of the April 2012 consultation, we set out a number of reasons for this, specifically relating to 080:

- the types of costs involved in implementing the changes to 080 are different, for example, we considered there to be no significant billing and system costs (unlike for the unbundled tariff). The increased mobile origination cost for SPs represents a rebalancing of payments, i.e. it changes who pays for the cost of originating 080 calls from mobiles rather than creating an additional cost. Therefore, the primary additional costs created by our 080 proposal are the migration costs; and
- the way we quantified the benefits of our unbundled proposal cannot be easily replicated for our 080 proposal. In particular, for 080 calls, SPs largely benefit from calls they receive. We were not able to model this effect because we did not have the necessary data. Whilst this does not have a significant effect for the 084/087 ranges, we noted it was a central aspect of our proposal to make the 080 range free-to-caller and, without being able to quantify that effect, it was difficult to provide an appropriate quantification of the overall benefits of our proposals.

A11.138 We, nevertheless, conducted a qualitative assessment of the benefits, as set out in Section 16 of the April 2012 consultation. We discussed the benefits in detail, setting out the impact on different stakeholder groups, as well as providing estimates of the costs. We considered that this was sufficient to enable stakeholders to assess the likely impact of our proposals. Similarly for the 116 range, in paragraphs 16.278 to 16.280 of the April 2012 consultation we conducted a qualitative assessment of the costs and benefits of making the range free-to-caller.

Stakeholder comments

A11.139 EE considered that the evidence we had gathered quite clearly suggested that making the 080 and 116 ranges free to caller would entail the highest costs for industry and consumers, with virtually no hard evidence to suggest that there will be any countervailing benefits for consumers. EE commented that it found it telling that we had not conducted a quantitative cost benefit assessment. It found our reasoning for not doing so unconvincing and it considered the absence of a quantitative assessment was a clear indication that the proposals did not meet the mandatory statutory requirements.

A11.140 EE commented that, as with all NGCs including those to other number ranges, it is true that "SPs largely benefit from calls they receive". However, EE could see no reason why this should be a bar to us attempting to model the benefits to consumers we claim will result from greater awareness, and the transparency, of freephone pricing in terms of reduced price misperception and/or increased demand, just as we have done for the unbundled tariff. EE argued that this exercise may fail, in that we may be unable to demonstrate any likely consumer benefits in terms of overall increased demand for and use of freephone numbers, but that checking this was precisely the point of conducting such an exercise.

Ofcom's response

A11.141 We agree with EE that SPs on number ranges other than 080 also benefit from receiving calls. We have therefore considered whether it would be appropriate to apply our modelling framework for the unbundled tariff to assess the benefits of our free-to-caller proposal, and have concluded that it would not be for two broad reasons. Firstly, there are technical reasons, related to the distribution of consumers' price expectations and fixed to mobile substitution, why the unbundled tariff framework is not an appropriate means of modelling the benefits which are common to both the unbundled tariff and free-to-caller. For the same reasons there are significant difficulties in developing an alternative framework to model these benefits in the context of a free-to-caller number range. Secondly, some of the key benefits of making the 080 range free-to-caller are not modelled within our unbundled tariff framework. These benefits are inherently difficult to quantify, but we consider that their exclusion would be misleading given their importance to our assessment of the policy options for the 080 range.

A11.142 On the technical reasons, we discussed the benefits to consumers/callers from making 080 free–to-caller in paragraphs 16.59 – 16.209 of the April 2012 consultation and in Section 13 of this document. In summary, these are:

- benefits to callers from improved price awareness and free mobile calls to 080 numbers, which together were likely to improve callers' confidence in the 080 number range;

- possible benefits to callers from increased service variety and innovation, which may be suppressed under the status quo by current mobile charges (although we recognised callers may also suffer from reduced service availability on 080 if SPs migrate or withdraw their services as a result of the increased cost to them of being on a free-to-caller 080 range);

- benefits to the significant number of SPs who are willing to pay an increased origination charge in exchange for being able to offer a free service to their callers; and

- benefits to those SPs remaining on 080 from the improved attractiveness of their services as a result of improved consumer price awareness and lower mobile call prices.

A11.143 The benefits to callers in terms of improved price awareness and confidence in the 080 range are similar to the benefits we modelled as part of our assessment of the benefits of the unbundled tariff.

A11.144 However, we do not consider it appropriate to apply the same modelling framework used to assess these benefits in relation to the unbundled tariff in the context of our free-to-caller remedy for the following technical reasons:

- the distribution of consumers' 080 price expectations is not conducive to the 'averaging' approach we have adopted in our assessment of the unbundled tariff proposal; and

- the unbundled tariff model is not designed to model fixed to mobile substitution – given that we expect making the 080 range free-to-caller to prompt significant fixed to mobile substitution, it follows that using a similar modelling approach to the unbundled tariff assessment would not be appropriate.

A11.145 On the first point, in Annex 16 of the April 2012 consultation, we set out how we adopted an 'averaging' approach to modelling the benefits of the unbundled tariff. In other words, we used the mean expected price of calls and the average actual price of residential calls to calibrate the demand curves. This assumed that all consumers face the same demand curve, which is a simplification of the variation in demand we would expect. In reality, each individual consumer would face their own demand curve and, in particular, they would have their own expectations about the price of NGCs.

A11.146 Nevertheless, we noted this approach would accurately reflect the dispersion of consumers' expected prices the closer the mean expected price was to the median expected price. In other words, if the dispersion of consumers' expected prices was normally distributed, the mean expected price would be a reasonable representation of consumers' expected prices in aggregate because, in theory, as many consumers would expect prices to be lower than the mean as the number who would expect prices to be higher than the mean. On the other hand, if the mean expected price was far away from the median expected price, this would suggest that consumers' expected prices were unevenly dispersed and therefore consumers' mean expected price would not be an accurate reflection of the distribution of consumers' expected prices. In this case, using the mean could either over or underestimate the level at which consumers tend to expect prices to be set.

A11.147 For this reason, we are reluctant to apply the modelling framework we have applied in our unbundled tariff impact assessment to the assessment of making the 080 range free-to-caller. Table A11.19 below shows the different mean and median expected prices of consumers that call 080, 0845 and 0870 numbers, relative to the actual prices they pay. The evidence shows that consumers' median expected prices of 080 calls (both fixed and mobile) are very similar to the actual price they pay, whilst consumers' mean expected prices are significantly above actual prices. This suggests that, although most consumers are not confident that they know the price of 080 calls, the price expectations of the majority are reasonably accurate, whilst a small minority overestimate 080 prices. This implies the existence of a bimodal distribution where, in the case of fixed 080 calls (which account for the vast majority of total 080 calls), 0ppm and a non-zero value of, say, 10ppm are the two modes. In contrast, both the mean and median expected prices of calls to 0845 and 0870 numbers are both significantly higher than the actual prices that consumers pay (and fairly close to each other in most cases). This suggests that the distribution of expected prices is relatively more 'normal' and that the majority of consumers (that answered the question by stating an expected price, rather than responding 'don't know') overestimate the price of 0845 and 0870 calls.

Table A11.19: Consumers' average expected prices for calls to non-geographic numbers, according to the 2009 Consumer survey, compared with actual prices

	080	0845	0870
Mean expected price from landlines, ppm [median expected price] (average actual residential price)	6 [0] (0)	30 [18] (5)	39 [38] (8)
Mean expected price from mobiles, ppm [median expected price] (average actual residential price)	29 [18] (20)	46 [38] (22)	51 [38] (20)

Source: Expected prices are from the 2009 Consumer survey. Q43/44: "How much do you think it costs to call the following types of telephone numbers from your landline/mobile phone at home during the daytime on a weekday?" [Base: all respondents with a landline/mobile phone].[333]

A11.148 Therefore, we consider that the 'averaging' approach applied in our assessment of unbundling 084 and 087 number ranges is appropriate because it is a relatively accurate measure of consumers' expectations about the price of these calls. On the other hand, we would be reluctant to apply the 'averaging' approach to the assessment of making 080 calls free-to-caller due to the different distribution of expected prices. Using the mean and median as measures of the average in the case of a bimodal distribution can be misleading. For example, in the case of 080 calls, using the mean as a measure of average expected 080 prices would overstate the amount by which most consumers expect fixed and mobile 080 calls to be priced (as the mean is skewed by a small number of consumers that overestimate the price of 080 calls). On the other hand, using the median as a measure of average expected 080 prices would imply that all consumers' expectations of the price of fixed calls were entirely accurate. However, this is incorrect as the mean indicates some consumers overestimate 080 prices. In this case, using the median would imply there would be no benefits of implementing a free-to-caller approach, which we do not consider to be accurate given some consumers' incorrect expectations. In the case of mobile 080 calls, using the median would imply that all consumers slightly underestimate 080 prices and this implies there would be benefits of reducing price underestimation. However, this would be incorrect as, as demonstrated by the mean, some consumers overestimate the price of 080 calls.

A11.149 Moreover, given that the 080 range is the most recognised non-geographic number range, we would expect to see fewer benefits from a reduction in 080 price

[333] Actual prices taken from 2010 Flow of Funds study with an estimated uplift to account for the fact that the Flow of Funds data includes business calls as well as residential calls (for further explanation of this, see Part B, Annex 16). Actual prices are also adjusted to reflect VAT.

overestimation than we would in the 084/087 number ranges (reducing price overestimation was the first benefit we modelled in our unbundling impact assessment). Instead, we would expect to see a greater proportion of consumer benefits coming from an increase in consumers' confidence in 080 prices, leading to a shift in the overall demand in 080 calls (a shift in demand was the second benefit we modelled in our unbundling impact assessment). Given that a significant minority of consumers do not know the actual price of 080 calls[334], we would expect that an increase in price awareness would prompt the required increase in consumer confidence necessary for an increase in the overall demand for 080 calls. However, in comparison with modelling this effect in our assessment of the unbundled tariff, modelling the effect in the case of 080 calls would be more complicated due to the significant amount of fixed to mobile substitution we expect would arise from an approach that would disproportionately affect mobile prices.

A11.150 In the case of unbundling the 084 and 087 ranges, we assumed that there would be no fixed to mobile substitution. In reality, we acknowledged that consumers do substitute between different devices and that there is detriment associated with consumers using the 'wrong' device. However, we adopted a simplified approach and did not model fixed to mobile substitution on the following basis:[335]

- estimating a full demand system is more complex – we would need to make more assumptions (e.g. cross-price elasticities) about which we have little data. Therefore, it was not clear the precision of our estimates would have increased by adopting a more complex approach;

- the extent of substitution between fixed and mobile calls to the unbundled number ranges may not be material because the unbundled tariff would apply to both fixed and mobile OCPs and thus we would expect consumer's awareness of fixed and mobile prices to be improved in equal proportions; and

- the overall impact if fixed/mobile substitution were modelled is ambiguous – on the one hand, if the unbundled tariff improved consumers' price awareness then they may choose the 'wrong' device less often (a benefit that is not captured in our modelling). On the other hand, if consumers' awareness of the price of calls from one device improves by much more than their awareness of the price of calls from the other device then this may skew their choice of whether or not to originate calls using a landline or a mobile.

A11.151 Therefore, overall we considered that under the unbundled tariff, the impact on fixed to mobile substitution would not be material and, even if it was, the impact on consumers was ambiguous. In contrast, we expect fixed to mobile substitution on the 080 range to be far more significant, and potentially to offer benefits to consumers. This is for two reasons:

- first, making the 080 range free-to-caller involves a unilateral change to mobile prices whilst the unbundled tariff involves across the board changes to the structure of both fixed and mobile prices. Fixed calls to 080 numbers currently tend to be free whereas mobile calls to 080 numbers tend to be charged for. Consequently, 080 calls are currently heavily skewed towards fixed callers. We expect the impact of making mobile calls free will reduce the number of fixed calls and increase the number of mobile calls as consumers react to the change in

[334] 27% of fixed and 46% of mobile respondents did not know the price of 080 calls. 2009 Consumer survey. Q43 & Q44.
[335] See paragraph A16.90 of the April 2012 consultation.

relative prices (as set out in paragraph 12.127 of Section 12, we assume that there will be 45-60% fixed to mobile substitution as a result of implementing a free-to-caller approach on the 080 range); and

- second, the overall impact of fixed/mobile substitution on the 080 range could be beneficial for consumers. As a reaction to the change in the relative price of fixed and mobile 080 calls, we expect the consequent fixed to mobile substitution will lead to some consumers choosing the 'wrong' device less, i.e. they will benefit from calling 080 numbers from a more convenient device.[336]

A11.152 However, for the reasons set out above, estimating a full demand system that accounts for any fixed to mobile substitution is complex and would require us to make assumptions about factors for which we have very little data. As a result, we consider it would not be meaningful to attempt to quantify the benefits of this effect.

A11.153 Furthermore, we note that, in contrast to the unbundled tariff, modelling the benefits of improved price awareness alone would not take into account one of the central benefits of making the 080 range free-to-caller, notably the benefits to SPs resulting from having a number range which is genuinely free-to-caller. Any quantification of the benefits from making the 080 range free-to-caller that did not include an estimate of these benefits would therefore significantly understate the overall benefits. However, quantifying these effects on SPs is inherently difficult.

A11.154 As a result of the above, we continue to consider it more appropriate to assess the benefits of making the 080 range free-to-caller within a qualitative framework than by applying the quantitative framework used to evaluate the unbundled tariff.

A11.155 With respect to the 116 number range, we also continue to regard it as appropriate to make a qualitative assessment of the benefits of making 116 free-to-caller. This is for two reasons:

- first, as set out in Section 4, we consider that consumer harm on the 116 range is currently limited. However, we are concerned about the issues that may arise as the number range increases in usage. It is difficult to accurately quantify the benefits of reducing this potential future harm, although this is a key benefit; and

- second, we consider that a number of the benefits of making the 116 range free-to-caller are not conducive to quantification in a robust manner.

A11.156 Regarding the first reason, we take an example from the model used to assess the relative costs and benefits of the unbundled tariff. Within this assessment, we identified that consumers overestimate the price of 084/087 calls by a certain amount. We were then able to say that implementing the unbundled tariff would need to reduce price overestimation by x% in order for the benefits to outweigh the costs. Conversely, on the 116 range, while we say that there is an issue in terms of a lack of consumer price awareness, we acknowledge that the main reason for this is the low number of users of it. However, we consider that there is a risk that this lack of awareness remains (we also consider that there is a risk of other market failures developing on this range) as the number of SPs using the range increases. We consider that making the 116 range free-to-caller will help to make consumers more aware of the range but the counterfactual against which we measure this

[336] We originally discussed this issue in paragraphs A16.86 to A16.90 of the April 2012 consultation. We recognise that not all of this substitution may be efficient and consider this potentially negative effect within our assessment of policy options (see Section 13).

benefit (a situation where the range is more widely used and is affected by the market failures) does not currently exist and is therefore difficult to quantify.

A11.157 On the second reason, as set out in Section 16 of the April consultation, we consider that the main benefits and costs of making the 116 range free to caller are as follows:

- benefits – greater consumer price awareness, greater access for vulnerable consumers to socially important services and reduced potential for consumer confusion via the horizontal externality being addressed;

- costs – additional costs to SPs in terms of higher origination charges for mobile calls for those 116 numbers that might in future have been designated Freephone rather than free-to-caller, possibly leading to a reduction in service availability by making the 116 range less attractive to these SPs.

A11.158 Even if we knew exactly how 116 consumers would be harmed if the number range was more widely used (which, as discussed above, we do not), the benefits and costs of making 116 free-to-caller are not easily quantifiable. For example, in the case of improving vulnerable consumers' access to socially important services, we have not modelled this before due to the difficulties of attaching a monetary value to this effect, as set out in paragraph A16.103 of the April 2012 consultation. However, this is a key benefit in relation to the 116 range so omitting it or quantifying it incorrectly would have a significant impact on the accuracy of our results. In terms of costs, as discussed above, we have never attempted to quantify the impact of making 116 free-to-caller on the level of SP service availability as this is also difficult to do robustly.[337] Again, as this is a key factor in the impact assessment, omitting it from a quantified assessment or quantifying it incorrectly would have a significant impact on the usefulness of our results.

A11.159 Overall, we consider that it is difficult to robustly quantify the benefits of making 116 free-to-caller when the exact scale of the consumer harm that could potentially arise, but is avoided by making it free-to-caller, is unclear. Further, even if there was clear and measurable consumer harm at present, it would be far from straightforward to robustly quantify the key costs and benefits of making all 116 numbers free-to-caller.

A11.160 Our qualitative assessment of the benefits of making the 080 and 116 ranges free-to-caller is set out in Section 13.

[337] We do, however, have a clearer idea of the implementation costs of making 116 free-to-caller. Immediate costs will be minimal because all existing 116 numbers are already free-to-caller and the one designated 116 Freephone number has not yet been allocated an SP. The only significant costs will be additional costs (in terms of higher origination charges for mobile calls) for those 116 numbers that might in future have been allocated as Freephone rather than free-to-caller. In spite of this, we do not consider that this knowledge makes the overall quantification of the costs and benefit of making 116 free-to-caller more straight forward given the uncertainty over the other factors.

Part A - Annex 12

Equality impact assessment

Introduction

A12.1 We are required by statute to have due regard to any potential impacts our proposals may have on certain equality groups. We fulfil these obligations by carrying out an Equality Impact Assessment ('EIA'), which examines the potential impacts our proposed policy is likely to have on people, with respect to certain protected characteristics (e.g. range, age, gender, disability).

Our views in the April 2012 consultation

A12.2 We noted in the April 2012 consultation that issues such as poor price transparency had an adverse effect on all segments of society and therefore all consumers of NGC services were likely to benefit from our proposals. However, we considered that there might be particular benefits for vulnerable consumers (low income and in low socio-economic groups, i.e. DE) because a larger proportion of those consumers are in mobile only households and, for example they would benefit from improved access to socially important services.[338]

A12.3 We said that we did not consider that any particular equality group would be negatively impacted by our proposal. We said the only potential area of concern lay with the tariff package effect because reductions in some call charges could lead to a restructuring of other call charges. We noted that in general such tariff rebalancing should allow consumers to choose tariffs that better reflected their call preferences, but highlighted that as a result of our proposals for the 080 range there was a potential risk of a particular impact on fixed line revenues, which in turn could impact those in fixed-only households. However, we noted that it was not clear how material that effect would be and we also highlighted that on fixed lines, certain types of disadvantaged consumers were already protected by specific social tariffs which should cushion, if not cancel, the impact of any change.

A12.4 We completed our assessment by comparing the composition of the vulnerable consumer groups we had identified (i.e. those in mobile only, low income households, as well as fixed only households) with particular equality groups that we are required to consider (women, over 55s, ethnic groups and persons with a disability). We noted that these equality groups are often more highly represented in the vulnerable consumer groups. Consequently, because we considered that our proposals would have a positive effect on vulnerable consumers, we concluded that there would also be a positive impact on race, disability and gender groups.[339] We noted that fixed only households could potentially be at risk from a negative impact and that those with a disability and the over 55s were more likely to be represented in that group. However, we also noted that those with a disability were also more likely to be in mobile-only households, who were more likely to see benefits. We also considered that it was unclear whether the negative impact on fixed-only households would be material, and that there were additional protections already in place for these consumers.

[338] 25% of households in the DE socio-economic group are mobile-only (compared to 15% overall). Ofcom, 2012 CMR, Figure 5.76, p.350.
[339] The EIA was set out in Annex 15 of the April 2012 consultation.

A12.5 Overall we provisionally concluded that our proposals would have a positive impact on equality groups.

Stakeholder comments

A12.6 A number of respondents agreed with our EIA in the April 2012 consultation without any further comments, including BT, CWW, [✂] and the DWP.[340] Vodafone also agreed that the equality groups identified were likely to share in the benefits which all consumers would experience and they were unlikely to be significantly negatively affected. It noted, however, that the size of the benefits were uncertain and therefore that the precise impact on vulnerable consumers was uncertain. In particular it noted that the extent of the impact of making the 080 and 116 ranges free-to-caller depended on the extent to which the particular SPs which vulnerable consumers have the most need to contact chose these numbers in preference to other contact routes, as well as the extent of tariff rebalancing (e.g. if mobile origination payments did not allow a reasonable recovery of common costs other charges may have to increase, which could leave the net effect on vulnerable consumers indeterminate).[341]

A12.7 THA also agreed that the equality groups identified in the EIA were likely to benefit from Ofcom's proposals. However, it commented that it was concerned that access to socially important services could be negatively impacted by the increased cost of running 08 numbers.[342] The Surgery Line said that the EIA did not quantify the unique impact on those delivering primary care. It said those delivering socially valuable services (e.g. such as Surgery Line) should be permitted flexibility and freedom to prevent detrimental impacts.[343]

A12.8 O2 argued that there was little analysis on the extent to which vulnerable customers were denied access to socially important services and therefore it said it was difficult to draw any positive conclusions about the extent to which Ofcom's proposals were likely to have a positive impact on vulnerable consumers and it could not agree that they would have a positive impact. O2 said it was unfortunate that Ofcom did not evaluate its different proposals for the 080 and 0845 number ranges separately, given that these were the main ranges which provided socially important services.[344]

A12.9 EE said it had concerns that Ofcom's proposals might have a detrimental impact on all customer groups, especially the vulnerable customers in the equality groups identified in Annex 15 of the April 2012 consultation. It said it was not convinced that Ofcom had drawn the correct conclusions on the impacts in all instances and unless Ofcom acknowledged and addressed those weaknesses there was a significant risk that the proposals could instead result in disbenefits to all consumers with vulnerable consumers being particularly adversely impacted.[345] It believed there was a very high risk that they would be disproportionately negatively impacted by a move to a charging structure that was more complicated than what existed today, and, potentially, by the impact of the tariff package effect and other price rises and SP migrations away from the 080 range. EE expressed concerns that,

[340] BT, April 2012 consultation response, p.7, CWW, April 2012 consultation response, p.4, [✂], and DWP, April 2012 consultation response, Q5.1.
[341] Vodafone, April 2012 consultation response, p.25.
[342] THA, April 2012 consultation response, p.4.
[343] Surgery Line, April 2012 consultation response, p.2.
[344] O2, April 2012 consultation response, p.12.
[345] EE, April 2012 consultation response, p.18

even though Ofcom noted that those with a disability and over 55 were most likely to be in fixed only households (A15.13 of the April 2012 consultation), Ofcom did little to understand the extent of the potential negative impact of its proposals on these customers. It said Ofcom's conclusion clearly ignored the fact that a significant group of vulnerable customers might not be better off – namely those who live in fixed only households. It said the EIA therefore seemed incomplete.[346]

Our view of consultation responses

A12.10 Before we respond to stakeholders' individual comments, it is worth explaining the objective of an EIA. An EIA is a documented assessment of the potential impact of an Ofcom proposal or decision on certain defined equality groups (in particular, age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex, sexual orientation and (in Northern Ireland only) religious belief/political opinion and dependants). In this EIA we therefore are specifically considering whether the decisions we are minded to take to implement the unbundled tariff and to make the 080 and 116 number ranges free-to-caller will have a particular impact on these equality groups.

A12.11 A number of stakeholder comments refer more generally to vulnerable consumers' access to socially important services in their responses to our EIA. We have set out our assessment of this particular issue under the relevant criterion in Section 8 and Annex 19 for the unbundled tariff and Section 13 and Annex 29 for 080/116. We conclude in those sections that our decision to implement the unbundled tariff and to make 080/116 free-to-caller will have positive benefits for consumers overall and more specifically, will improve vulnerable consumers' access to socially important services. As part of our assessment in the Annexes we have responded to stakeholders' specific concerns (e.g. THA's concern about the impact of making 080/116 free-to-caller on providers of socially important services).

A12.12 In response to Surgery Line's comments, it is not the purpose of this EIA to quantify the unique impact on those SPs using NGCs to offer primary care. We have set out in the sections and Annexes highlighted above why we consider that the unbundled tariff will improve vulnerable consumers' access to socially important services (which includes primary care services offered on the 084 number ranges). It is ultimately the decision of the SP concerned which phone number it chooses to offer as a point of contact for its customers and to consider whether the SC for that number range is appropriate for the needs of its customers. The unbundled tariff will make tariff structures clearer but it will not force SPs to migrate away from number ranges. In addition, the 18 month implementation period (which will not come into effect until after the publication of our final statement should provide sufficient time for SPs providing these services to make any necessary amendments or migrate to alternative number ranges should they feel it is appropriate to do so. We therefore do not consider it is necessary to uniquely quantify the impact on SPs providing primary care.

A12.13 We have responded to O2's comments about our evaluation of vulnerable consumers' access to socially important services in Annex 19 as this is related more broadly to this aspect of our assessment criteria. In terms of whether the impact on vulnerable consumers is likely to be positive or not, we have set out in the relevant sections (highlighted in paragraph A12.11 above) why we consider that the impact will be positive overall. On O2's point that we did not evaluate different number ranges separately, that is the case with respect to the EIA because the

[346] EE, April 2012 consultation response, p.20.

objective is to consider the impact on the specific equality groups. However, we have assessed the unbundled tariff and making the 080 and 116 ranges free-to-caller separately in the relevant sections, and for the unbundled tariff decision we have specifically considered the 084 range when assessing that remedy against our criterion of 'access to socially important services'.

A12.14 We accept Vodafone's comment that the size of the overall impact on consumers, as well as the precise impact on vulnerable consumers (and therefore the equality groups which are more highly represented within the vulnerable consumer sub-set), is uncertain. However, we do consider these impacts are likely to be positive, for the reasons set out in Section 8 and Section 13. In addition, our quantified impact assessment for the unbundled tariff (see Annex 11) indicates that the benefits each of reduced price overestimation or increased demand for NGCs is likely to outweigh the costs involved with its implementation. With regards to the 080 range we have updated our assessment of the tariff package effect 'TPE' and have reflected this in the analysis below.

A12.15 We have responded to EE's specific arguments about the impact of the unbundled tariff structure on vulnerable consumers in Annex 19 (see paragraphs A19.125 to A19.127) and for 080 in Annex 29. On EE's point about disabled, fixed-only consumers over the age of 55, we highlighted in paragraph A15.10 and A15.15 that it was not clear that the negative impact on fixed-only households would be material. We also noted that there are additional protections, already in place for those consumers, such as BT's and Kingston Communication's universal service obligation to offer special tariffs for users with low income. We therefore disagree with EE that we did not consider the potential impact on these groups. Nevertheless, we have updated our analysis below to take account of our latest TPE assessment.

Updated analysis and conclusions

A12.16 As in the April 2012 consultation, we consider that the benefits of implementing the unbundled tariff and making the 080/116 ranges free-to-caller will apply equally to all consumers but that there may be some particular benefits for vulnerable consumers[347] due to their greater reliance on social services and the higher preponderance of mobile only households.[348] These benefits include improved price awareness, prices for NGC services that better reflect consumer preferences, improved access to socially important services and better service variety, innovation and availability of NGC services.

A12.17 We remain of the view that no particular equality group will be negatively impacted by the unbundled tariff or making 080/116 free-to-caller. As highlighted by some of the stakeholder comments, there is, however, a risk that the tariff package effect could lead to a particular negative impact on consumers through a restructuring of call charges. Whilst we do not expect to see a significant TPE as a result of the implementation of the unbundled tariff, we recognise that making the 080 range free-to-caller could lead to a negative TPE. Annex 28 sets out our updated analysis

[347] We have applied the same definition to vulnerable consumers as in the April 2012 consultation, that is consumers that have a low income (i.e. less than £11,500 a year) or those that below to low socio-economic groups (i.e. DE). We also consider that consumers that are involuntarily mobile only and elderly and/or disable consumers that are dependent on telecoms should be included in this category.

[348] 25% of households in the DE socio-economic group are mobile-only (compared to 15% overall). Ofcom, 2012 CMR, Figure 5.76, p.350.

in this respect and this is further discussed in Section 13. Our calculations suggest that there is likely to be a negative impact on fixed OCPs' 080 profits as a result of making the 080 range free-to-caller (because callers will make more 080 calls from mobiles rather than fixed lines), and also that the TPE for mobile OCPs could also be negative under some scenarios (although it also could be positive under others). However, there are a number of reasons why we consider that the actual impact on OCP profits, and therefore the TPE, is likely to be more favourable than our estimates suggest (see paragraphs 13.44 to 13.47 in Section 13). In addition, the scale of the profit reduction is relatively small, particularly in the context of overall OCP revenues and therefore we consider this is likely to have a minimal impact in terms of the TPE.[349]

A12.18 The positive and negative impacts outlined above should apply equally to all consumers, however, there is a potential for a particular positive effect on mobile-only and vulnerable consumers, as well as a risk of a negative impact on fixed-only households.

A12.19 Table A12.1 below sets out the updated data we have available on the proportion of the identified equality groups within the sub-set of consumers we consider could be impacted by our proposals (i.e. mobile-only, fixed-only, low income and DE households)

Table A12.1: Proportion of total population and proxy groups who belong to equality groups

Category	Population as a whole (%)	Mobile-only households (%)	<£11.5K pa income (%)	DE group (%)	Fixed only households (%)
Population as a whole (%)	-	15	17	27	5
Female	52	14	20	30	6
Minority Ethnic Group	9	15	13	28	4
Over 55	33	5	22	30	14
With a disability	15	10	29	41	18

Source: Ofcom Technology Tracker Wave 2 2012 (May-July). Base size 2893 UK adults 16+

A12.20 As in the April 2012 consultation, this indicates that some of the equality groups are more likely to be in low-income and/or DE households, particularly those with a disability, and therefore these groups could see a particular positive benefit from the implementation of the unbundled tariff and making the 080/116 ranges free-to-caller.

A12.21 The Table also indicates that the over 55s and disability groups are statistically more likely to be in fixed only households. Therefore there is a risk of a negative impact on these groups if the fixed TPE leads to an increase in fixed line prices. However, as set out in paragraph A12.17 above, our analysis indicates that this effect is unlikely to be material. In addition, both the over 55s and disability groups

[349] In particular we estimate that the maximum reduction in fixed OCP profits is £25m and the maximum reduction in mobile OCP profits under our base case scenario is £24m. In 2012 fixed access and call revenues were £8.9bn and mobile retail revenues were £15.1bn (Figure 5.1, Ofcom 2012 CMR, p.281). The 2010 Flow of Funds study indicated that fixed retail revenues from non-geographic calls in 2009 were £1,255m and mobile retail revenues were £610m (p.9).

are more highly represented in the low income/DE households, which we have noted are likely to see positive benefits as a result of improved price awareness and access to socially important services on the 084/080 number ranges.

A12.22 Finally, as noted in the April 2012 consultation there are additional protections in place for particularly disadvantaged consumers through specific social tariffs which should mitigate the impact of any change. In particular BT and Kingston Communications are required (as universal service providers) to offer a Special Tariff scheme that targets users with low incomes.[350]

A12.23 Therefore, we conclude, in line with the April 2012 consultation that overall the implementation of the unbundled tariff and making the 080/116 ranges free-to-caller will have a positive impact on the identified equality groups.

[350] http://stakeholders.ofcom.org.uk/telecoms/ga-scheme/specific-conditions-entitlement/universal-service-obligation/

Part A – Annex 13

Legal powers

Introduction

A13.1 In Section 6, we state that we are minded:

13.1.1 to introduce the unbundled tariff (as described in detail in Part B of this document); and

13.1.2 to impose a maximum retail price of zero for calls to the 080 and 116 number ranges (as described in detail in Part C of this document).

A13.2 In order to implement the unbundled tariff and to make 080/116 numbers free-to-caller, we would be relying on a wide range of powers to set or modify conditions and other legal instruments. These are explained in detail in Section 6.[351] In essence, the powers we are minded to rely on enable us:

13.2.1 to require that the retail price of calls to non-geographic number ranges should be split between an AC and SC element, to set tariff principles in relation to the structure of the AC and SC and to set maximum caps on the SC element; and

13.2.2 to require that the maximum retail price of calls to the 080 and 116 number ranges is set at zero.

A13.3 In this Annex, we summarise what we said about the extent of these powers in the April 2012 consultation and stakeholder comments in response to this. We then set out our response to these comments. Although we have grouped the comments into topics for the purpose of marshalling a comprehensive response, there is a considerable degree of overlap in the comments made by stakeholders in relation to the exercise of our legal powers. Therefore, the responses we set out under individual topic headings should be read in conjunction with all the points we make in this Annex.

A13.4 At the end of this Annex we also summarise some other comments made by stakeholders in relation to legal issues and provide references to where in this document our response to these comments can be found.

April 2012 consultation

Amendments to the Common Regulatory Framework

A13.5 In the April 2012 consultation, we noted that the EU Common Regulatory Framework had been amended in 2009, including the introduction of two new provisions relevant to the regulation of numbers and NGCS.[352]

A13.6 The first of these provisions was an amendment to Part C of the Annex to the Authorisation Directive, which sets out the conditions which may be attached to

[351] Section 3 also sets out, at a high level, our general powers and duties under the Act and our powers and duties in relation to telephone numbering.
[352] Paragraphs 5.12 – 5.15, Part A, April 2012 consultation

rights of use for numbers. The amendment clarified the condition specified in paragraph 1 of Part C of the Annex ('Annex C(1)').

A13.7 Annex C(1) (as amended) now provides that the following may be attached to rights of use for numbers:

"Designation of service for which the number shall be used, including any requirements linked to the provision of that service and, for the avoidance of doubt, tariff principles and maximum prices that can apply in the specific number range for the purposes of ensuring consumer protection in accordance with Article 8(4)(b) of Directive 2002/21/EC (Framework Directive)."[353]

A13.8 The second of these provisions was an amendment to Article 21 of the Universal Services Directive ('USD') which enables NRAs to impose obligations on CPs in relation to the publication of pricing and tariff information. Article 21 (as amended) now states that Member States shall ensure that NRAs are able to oblige CPs to provide *"applicable tariff information ...regarding any number or service subject to particular pricing conditions"*[354] and information on *"standard tariffs indicating the services provided and the content of each tariff element...".*[355]

A13.9 We explained that these amendments had been transposed into national law (following consultation by the UK Government[356]) by the Electronic Communications and Wireless Telegraphy Regulations 2011, which came into force on 26 May 2011 and amended the Act.

A13.10 Specifically, Ofcom's power to make general conditions in relation to the allocation and use of numbers was amended to include an additional power. Section 58(1)(aa) of the Act provides that general conditions may:

"impose tariff principles and maximum prices for the purpose of protecting consumers in relation to the provision of an electronic communications service by means of telephone numbers adopted or available for use".

A13.11 Similarly, Ofcom's duty to publish the Numbering Plan was amended. Section 56(1)(ba) of the Act provides that the Plan should set out:

"such requirements as [Ofcom] consider appropriate, for the purpose of protecting consumers, in relation to the tariff principles and maximum prices applicable to numbers so adopted or available for allocation".

Definition of a "consumer"

A13.12 We noted that these provisions were included for the purpose of consumer protection, and that the definition of "consumer" in the Framework Directive differed from that in the Act. The Framework Directive defines a consumer as "any natural person who uses or requests a publicly available electronic communications service

[353] Article 8(4) of the Framework Directive provides that one of the regulatory principles of the framework is the promotion of interests of EU citizens by: *"inter alia.... (b) ensuring a high level of protection for consumers in their dealings with suppliers....."*
[354] Article 21(3) Universal Service Directive
[355] Article 21(1) and paragraph 2.2 of Annex II, Universal Service Directive
[356] The Department of Business, Innovation and Skills, *Implementing the revised EU Electronic Communications Framework, Overall approach and consultation on specific issues,*13 September 2010, available at: http://www.bis.gov.uk/Consultations/revised-eu-electronic-communications-framework?cat=closedawaitingresponse

for purposes which are outside his or her trade, business or profession."[357] The Act defines consumers more widely to include persons "in their personal capacity or for the purposes of, or in connection with, their businesses".[358] We said that our starting point was the definition under the Act, as this provides the authority for Ofcom to act. However, we noted that our interpretation of a provision may be influenced by the EU provision, especially where the power granted by the Act directly derives from the Common Regulatory Framework.

A13.13 We stated that the consumer harm we had identified affected consumers who were natural persons, acting for non-business purposes, but also had an impact on SPs, which are consumers of electronic communications services for business purposes. We therefore considered that, irrespective of whether a narrow or wide definition of consumer is adopted, the measures that we proposed to take in reliance on section 58(1)(aa) of the Act would be "for the purpose of consumer protection". Furthermore**,** in line with our duties under sections 3 and 4 of the Act, we said that we must consider the interests and opinions of consumers under the wider definition in the Act, as well as the impact more generally on all stakeholders, when considering whether to impose General Conditions.[359]

Relationship with SMP regulation

A13.14 In response to stakeholder comments, we considered whether our power to set general conditions under section 58(1)(aa) is constrained by other provisions of the Common Regulatory Framework, so that it may only be exercised in relation to CPs that have SMP and in circumstances where wholesale regulation has proved ineffective.[360]

A13.15 We considered that the power to set conditions in relation to rights of use for numbers under Article 6(1) of the Authorisation Directive, and to incorporate tariff principles and maximum prices under Annex C(1) (from which section 58(1)(aa) is derived), is legally and conceptually distinct from our powers to impose SMP conditions. Provided the purpose of a condition set under section 58(1)(aa) is consumer protection, rather than being targeted at the promotion of competition, we considered that it was not constrained by the provisions of the Common Regulatory Framework relating to SMP regulation (in particular, Articles 14 to 16 of the Framework Directive and Article 17 of the Universal Service Directive).

Regulation of retail prices

A13.16 We also considered whether section 58(1)(aa) could be used to set a general condition applying to OCPs.[361] This was in response to arguments from Vodafone and Three that it is the TCP (and not the OCP) which has a right of use in relation to non-geographic numbers. Since Part C of the Annex to the Authorisation Directive only provides for the imposition of conditions attached to rights of use, these stakeholders argued that Part C could not form the basis of conditions regulating retail prices set by the OCP.

A13.17 We considered that the drafting of s.58(1)(aa) of the Act did not impose such a constraint, and that we were satisfied that it allowed for the imposition of retail price

[357] Article 2(i), Framework Directive
[358] Section 405(5) of the Act
[359] Paragraphs 5.27 – 5.22, Part A, April 2012 consultation
[360] Paragraphs 5.46 – 5.54, Part A, April 2012 consultation
[361] April 2012 consultation, Part A, paragraphs 5.55 – 5.60

controls for the purpose of protecting consumers. In particular, we said that the wording of the section permits the imposition of a condition imposing tariff principles and maximum prices on any ECS provided by means of the number range in question (not only an ECS provided by a TCP). We also considered that this interpretation was consistent with provisions of the Authorisation Directive and the approach taken in other provisions of the Act. Finally, we said that the narrower interpretation advocated by Vodafone and Three could defeat the consumer protection purpose of Annex C(1) of the Authorisation Directive.

Stakeholder comments in response to the April 2012 consultation

A13.18 We received a number of comments from stakeholders in relation to this aspect of the April 2012 consultation. We have grouped these comments into the following topics:

13.18.1 retail price regulation and the interpretation of "rights of use";

13.18.2 alternative regulatory approach;

13.18.3 meaning of "consumer";

13.18.4 SMP regulation; and

13.18.5 proportionality / exceptional nature of powers.

Retail price regulation and the interpretation of "rights of use"

A13.19 Vodafone and Three continued to submit that section 58(1)(aa) of the Act and Annex C(1) of the Authorisation Directive do not empower us to regulate retail prices.[362]

Interpretation of the term "rights of use"

A13.20 Vodafone[363] and Three[364] both argued in favour of a narrow interpretation of the term "rights of use" for numbers. They submit that section 58(1)(aa) must be read in light of the Common Regulatory Framework, which makes clear that conditions attaching to a "right of use" for numbers may only be imposed on the CP that has been allocated the numbers (i.e. the TCP), and that a "right of use" does not cover the activities of an OCP in conveying a call to a non-geographic number.

A13.21 They both responded specifically to the three reasons which we had put forward in the April 2012 consultation for rejecting a narrow interpretation of the term "rights of use".

A13.22 First, we said that end-user access to numbers, including non-geographic numbers (paragraph 4 of Part A of the Annex to the Authorisation Directive ('Annex A(4)')

[362] Although Vodafone considered that our regulatory proposals in relation to the AC set by OCPs are transparency measures that are capable of being introduced under our powers derived from Article 21 USD (Vodafone, April 2012 consultation response, paragraph 4.7). We discuss this further in paragraph A13.91 below.
[363] Vodafone, April 2012 consultation response, Annex 3
[364] Three, April 2012 consultation response, paragraphs 9, 59 – 66

and Article 28(1) USD) could only be achieved if the OCP has a right of use in relation to the numbers in question.[365]

13.22.1 Three considered that our reliance on Annex A(4) was misplaced, as there is a strict separation between conditions forming part of the general authorisation (Part A) and conditions on the "right of use" (Part C). According to Three, the fact that Part A (rather than Part C) already codifies the provision of Article 28 USD in fact supports its narrow interpretation of the term "rights of use".[366]

13.22.2 Vodafone also stated that OCPs only have a right to use or access a number range where the range holder has facilitated this through an interconnection agreement. Accordingly, if an NRA wishes to guarantee end-user access, it must first impose obligations on the number range holder to ensure the OCP is able to interconnect. Absent such an access obligation, using Article 28 USD to oblige an OCP to provide access would mean that it would have no certainty of being able to comply.[367]

A13.23 Second, we said that a wider interpretation of the term "rights of use" was consistent with the approach taken in the Act, which empowers us to impose general conditions in relation to the adoption by a CP of telephone numbers (section 58). We noted that the definition of "adoption" in the Act was sufficiently wide to cover the activities of an OCP conveying a call by one of its customers to a non-geographic number and then billing the customer for that call.[368]

13.23.1 Three argued that our reliance on the meaning of "allocation" (sic) in the Act was of no assistance in interpreting the requirements of the Authorisation Directive, which uses the language "grant". Three also stated that the "rights" to which the Directive refers are rights that are transferable, tradeable and granted following an administrative procedure, which would not on its face appear to include the conveyance of calls by an OCP to a particular number.[369]

13.23.2 Vodafone also commented on this point. It considered our analysis to be highly controversial, as it would give us a near unfettered right to regulate retail origination charges.[370]

A13.24 Third, we said that the narrow interpretation advocated by Vodafone and Three could defeat the consumer protection purpose of Annex C(1) of the Authorisation Directive, as it would be much harder to demonstrate that controls on wholesale charges set by the TCP would ensure a high level of consumer protection.[371]

13.24.1 Three stated that this difficulty does not mean that the consumer protection purpose would be defeated. Rather, it only means that price regulation is available in limited circumstances, which is entirely consistent with the general approach of the Common Regulatory Framework.[372]

[365] April 2012 consultation, Part A, paragraph 5.57
[366] Three, April 2012 consultation response, paragraph 64
[367] Vodafone, April 2012 consultation response, Annex 3, paragraph 3.13
[368] April 2012 consultation, Part A, paragraph 5.58
[369] Three, April 2012 consultation response, paragraph 64
[370] Vodafone, April 2012 consultation response, Annex 3, paragraph 3.10
[371] April 2012 consultation, Part A, paragraph 5.59
[372] Three, April 2012 consultation response, paragraph 64

13.24.2 Vodafone considered that this argument was not credible in light of our proposal to impose an access condition on OCPs to provide wholesale origination to TCPs, which Vodafone contended was an exercise of our powers under Article 6(1) and Annex A(3) of the Authorisation Directive which provide that an NRA can attach conditions to the use of numbers governing interoperability and interconnection of networks. [373]

A13.25 Vodafone stated that, even if our interpretation of the Authorisation Directive were valid, it would still not enable the direct regulation of an OCP's retail charges, as General Condition 17.1 does not permit an OCP to "adopt" a number unless it has been authorised to do so by the person allocated the number. According to Vodafone, the clear corollary of this is that general conditions must first attach to the number range holder before any further appropriate obligations can be passed through to the undertakings granted permission to use the number.[374]

A13.26 Three also argued that our interpretation of the term "rights of use" is inconsistent with that set out in the current General Conditions. However, Three provided no further detail or examples to support this submission.[375]

Retail regulation as a last resort

A13.27 Vodafone[376] and Three[377] argued that the underlying principle of the Common Regulatory Framework is that retail regulation should only be imposed as a last resort and not in competitive markets.

A13.28 Vodafone stated that, if it were really the case that the Authorisation Directive provided a free-standing power outside of the Common Regulatory Framework to regulate retail origination charges, the Community legislature would surely have been explicit in its intention to confer upon NRAs such a wide-ranging power. It stated that there was no such suggestion in the relevant provisions of the Directive or its recitals, and contrasted this with Recital 12 of the EC Roaming Regulation (717/2007), which makes clear that the Regulation provides for a new power that is inconsistent with the approach to regulation proposed by the Common Regulatory Framework.[378]

Supply of services versus retail / wholesale distinction

A13.29 In Vodafone's view, Annex C(1) of the Authorisation Directive provides that NRAs may specify the service for which a particular number range may be used, and attach requirements to the provision of a service in a particular range, some of which could include tariff principles and maximum prices.[379]

A13.30 Vodafone considered that the distinction we had drawn between retail and wholesale services was therefore artificial as Annex C(1) of the Authorisation Directive does not make this distinction, but rather focuses on services provided in the number range and the requirements that can be attached to the provision of these services. It noted that the purpose of Annex C(1) is to protect consumers in their dealings with suppliers (Article 8(4)(b) of the Framework Directive). Vodafone

[373] Vodafone, April 2012 consultation response, Annex 3, paragraph 3.17
[374] Vodafone, April 2012 consultation response, Annex 3, paragraphs 3.11 – 3.12
[375] Three, April 2012 consultation response, paragraph 66
[376] Vodafone, April 2012 consultation response, Annex 3
[377] Three, April 2012 consultation response, paragraphs 9, 59 – 66
[378] Vodafone, April 2012 consultation response, Annex 3, paragraphs 3.4 – 3.6
[379] Vodafone, April 2012 consultation response, Annex 3, paragraphs 3.6 – 3.7

considered the term “suppliers” to be significant and capable of being interpreted broadly to include undertakings other than the OCP. According to Vodafone, if the Community legislature had intended to limit the scope of NRAs’ powers to the regulation of OCPs alone, then it would not have adopted the formulation it did. Vodafone considered that SPs and TCPs are also suppliers and the primary service being offered to end users is, in fact, the service being offered by the SP and TCP such as a sales or helpline. Vodafone considered the access and call origination service supplied by the OCP to be a consequential service, dependent on the initial facility being supplied by the SP/TCP.[380]

A13.31 It contended that Ofcom had, in fact, acknowledged that the provision of non-geographic services comprises a number of constituent elements provided to end users in its unbundling proposal, since it envisaged the introduction of a separate service charge. However, it suggested that this would not be feasible under Ofcom’s analysis since it would appear to constitute price regulation at the wholesale level and therefore not capable, in Ofcom’s view, of promoting a consumer protection objective.[381]

Alternative regulatory approach

A13.32 Vodafone also put forward an alternative approach for securing our policy objective for making the 080 range free-to-caller, which it considered was more legally robust than our proposal and would also enable us to set a single mobile origination charge across industry for calls to 080 numbers. In summary, Vodafone submitted that we should achieve the policy proposal of making 080 numbers free-to-caller by exercising the power under section 58(1)(aa) in the following way:

- specify that 080 numbers are to be used to supply services that attract no service or access charges.
- require the TCP to whom the 080 number has been allocated:
  - to interconnect calls to the 080 number at no charge;
  - to procure that any SP wishing to use the 080 number range communicate to its customers that no SC is to apply for calls to their number (alternatively, Vodafone submitted that it would be possible for Ofcom to require that the SP that has been given a right to use the number by the TCP levy no SC for calls to the number);
  - to procure that an OCP wishing to interconnect with it in respect of the 080 number range levies no retail charge for originating calls to those numbers;
  - to pay a mobile origination charge to the OCP at a rate specified by Ofcom in order to enable the OCP to set a retail price of zero.

A13.33 Vodafone submitted that this approach is “plainly permissible” and envisaged under the terms of the Authorisation Directive and Article 8(4)(b) of the Framework Directive, in light of Vodafone’s view that the primary service being supplied to the caller is that of the TCP/SP (i.e. the sales/ helpline being provided on the number range). Vodafone also considered this to be consistent with General Condition

[380] Vodafone, April 2012 consultation response, Annex 3, paragraphs 3.19 – 3.23
[381] Vodafone, April 2012 consultation response, Annex 3, paragraph 3.22 and paragraphs 4.5 – 4.6

17.1, which envisages that the number range holder permits third parties to "use", "adopt" or access the number range concerned.[382]

A13.34 Vodafone also submitted that this approach would allow us to impose a mandated outpayment to OCPs, as this could be construed as a "requirement linked to the provision of a service", obviating the need for an access condition. Vodafone considered that this would minimise the scope for disputes about the level of the outpayment.[383] Three also suggested that the proper means of securing zero-rating and efficient cost recovery for OCPs would be to attach a "rights of use" requirement to 080 and 116 numbers obliging the TCP (i.e. the allocatee) to pay the OCPs' efficient costs of origination.[384]

A13.35 With respect to our proposed access condition, Vodafone contended that it did not reflect the commercial reality of interconnection. It also stated that any retail price regulation must be accompanied by price regulation at the wholesale level to avoid the risk of OCPs facing the possibility of supplying call origination below cost. According to Vodafone, this need was recognised by the EC in its impact assessment in relation to the Roaming Regulation.[385]

A13.36 Vodafone considered that its alternative approach could also be capable of supporting the unbundled tariff regime, given that it would allow for regulatory measures to be imposed on the undertakings using the number range and acting as a supplier of services to end users for the purposes of Article 8(4)(b) of the Framework Directive. It suggested that the measures Ofcom proposed to impose on the OCP to implement the unbundled tariff were essentially transparency measures that could be imposed under existing powers under the Universal Service Directive, namely Article 21. It therefore considered that the provisions of Annex C of the Authorisation Directive did not need to be invoked in order to regulate the access charge.[386]

Meaning of "consumer"

A13.37 EE[387] and [✂][388] considered that we did not have the legal power to implement our unbundled tariff and free-to-caller proposals in respect of business customers. EE noted that our powers to regulate at the retail level are derived from Annex C(1) of the Authorisation Directive, and must therefore be exercised for the purposes of ensuring consumer protection. The term "consumer" is defined in the Framework Directive as "a natural person who uses or requests a publicly available electronic communications service for purposes which are outside his or her trade, business or profession." It therefore considered that the unbundled tariff and free-to-caller regimes must provide an exception giving OCPs the option, should they so choose, to offer different tariffs to customers who wish to make calls to non-geographic numbers predominantly or exclusively for business purposes. [✂] stated that it was wholly disproportionate to impose regulations in respect of business users simply because we believe that they are warranted for consumers.

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382 Vodafone, April 2012 consultation response, Annex 3, paragraphs 4.1 – 4.3
383 Vodafone, April 2012 consultation response, Annex 3, paragraph 4.4
384 Three, April 2012 consultation response, paragraphs 10, 122
385 April 2012 consultation response, Annex 3, paragraph 3.16
386 Vodafone, April 2012 consultation response, paragraphs 4.6 – 4.7
387 EE, April 2012 consultation response, pages 36-37
388 [✂]

SMP regulation

A13.38 Some CPs considered that we should conduct a wholesale market review instead of (or in addition to) intervening at the retail level.

A13.39 Virgin Media considered that we should first intervene at the wholesale level and, only if the outcomes imposed did not cause an abatement of the problems at that level, should intervention at the retail level be considered. It considered that such an approach is required by the Common Regulatory Framework and is reflected in the Act.[389]

A13.40 EE stated that all TCPs have SMP in the termination of calls to non-geographic numbers, and this market power should be addressed by the imposition of SMP conditions. It also noted our "stated preference" for using our competition powers, which EE stated was to be enshrined in statute, and considered that NGCS was an example of a problem that should be dealt with by utilising these powers.[390] EE also said that we had failed to heed the warning in the CAT 08X Judgment regarding the caution that we should exercise when regulating the pricing of CPs in the absence of any relevant SMP findings.[391]

A13.41 EE disagreed with our view, as set out in the April 2012 consultation, that wholesale remedies would not address our retail concerns. One of the reasons put forward by EE was that, in comments to the French regulator in 2005, the EC stated that "call termination to non-geographic numbers is not per se excluded" from the definition of the fixed wholesale call termination market, and "should in principle be subject to market analysis under Article 16 of the Framework Directive". EE also noted that it had submitted in the context of our Narrowband Market Review that non-geographic call termination should be included in the fixed call termination market covered by that review.[392]

A13.42 Three stated that, regardless of the outcome of our April 2012 consultation, there remain significant concerns at the wholesale level such that we should commit to carrying out a wholesale market review in the medium term.[393]

Proportionality / exceptional nature of powers

A13.43 Despite its disagreement with our legal analysis, Three stated that its "predominant concern" (given its overall support for a free-to-caller approach) is that we had failed to define the limited and exceptional circumstances in which we considered we had the power to regulate retail prices, absent a finding of SMP.[394] Similarly, EE stated that our powers under section 58(1)(aa) were highly interventionist and should not be exercised lightly, and that any obligations imposed in the exercise of these powers must be proportionate, consistent and targeted only at cases in which action is needed.[395]

[389] Virgin Media, April 2012 consultation response, page 1
[390] EE, April 2012 consultation response, pages 3 and 57
[391] EE, April 2012 consultation response, pp.4 and 15. EE highlighted paragraph 442 of the 08X CAT Judgment, where the CAT stated "We are mindful that price control is an intrusive form of control which, elsewhere in [the Act], can only be introduced by SMP Condition".
[392] EE, April 2012 consultation response, pages 17-18. We address the other reasons put forward by EE in Annex 9.
[393] Three, April 2012 consultation response, paragraphs 10, 16, 18, 129-130
[394] Three, April 2012 consultation response, paragraphs 3, 9, 67-73
[395] EE, April 2012 consultation response, page 3

A13.44 Three also considered that the dividing line remained unclear between the power to regulate by SMP condition and the power to regulate under section 58(1)(aa) of the Act. It was concerned that a division based on whether the regulation was targeted at the promotion of competition or the protection of consumers, respectively, was inadequate to prevent further erosion of the general principle that price regulation can only be imposed in the event of a finding of SMP.[396] Similarly, Vodafone considered that any attempt to distinguish between a retail price cap imposed for a consumer protection purpose and a retail price cap imposed pursuant to a competition analysis is likely to fail, because retail intervention triggered by a competition objective is by its very nature designed to protect consumers.[397]

Ofcom's response

A13.45 We respond to stakeholders' comments under the following five headings (which correspond to those used in the previous sub-section):

13.45.1 retail price regulation;

13.45.2 Vodafone's alternative approach;

13.45.3 meaning of "consumer";

13.45.4 wholesale market review as an alternative; and

13.45.5 proportionality / exceptional nature of powers.

Regulation of retail prices

A13.46 The comments from stakeholders in relation to our powers to regulate retail prices relate to the following broad issues, which we consider in turn below:

13.46.1 interpretation of the term "rights of use";

13.46.2 retail regulation as a last resort; and

13.46.3 supply of services versus retail / wholesale distinction.

Interpretation of the term "rights of use"

A13.47 In summary, we remain of the view that the term "rights of use" in Annex C(1) of the Authorisation Directive should be given a wider interpretation than suggested by Vodafone and Three. We therefore consider that section 58(1)(aa) of the Act empowers us to regulate retail prices set by an OCP and the charges for the service provided by the TCP/SP, as set out in paragraph A13.2 above.

A13.48 We respond in detail below to Three's and Vodafone's arguments. We first address their comments in relation to the consistency of a wide interpretation of the term "rights of use" with the Common Regulatory Framework. We then consider the points they have raised about consistency with the provisions of the Act and the General Conditions.

[396] Three, April 2012 consultation response, paragraphs 3, 9, 67-73.
[397] Vodafone, April 2012 consultation response, Annex 3, paragraph 3.7

(i) Consistency with the Common Regulatory Framework

A13.49 Vodafone and Three have made a number of detailed arguments, based on a textual analysis, that the references to "rights of use" in the Authorisation Directive preclude an NRA from using the power in Annex C(1) to regulate retail prices. Before considering these textual arguments, we would note that Directives should be given a purposive interpretation if there is any ambiguity in drafting.

A13.50 The power in Annex C(1) is explicitly to be used "...*for the purposes of ensuring consumer protection in accordance with Article 8(4)(b) of [the Framework Directive]*". In turn, that Article states that one of the central policy objectives of the Common Regulatory Framework is the promotion of the interests of EU citizens, including by "*ensuring a high level of protection for consumers in their dealings with suppliers*...". We find it incongruous that a power which is explicitly to be exercised for consumer protection purposes could (on Vodafone's and Three's interpretation) only ever be exercised to regulate the prices charged by CPs to each other at the wholesale level, and could never be exercised to regulate the prices that are directly charged to consumers by their suppliers (i.e. CPs).[398] Giving effect to the consumer protection purpose for which this power was explicitly introduced would militate in favour of the term "rights of use" being given a wide interpretation to encompass both numbers allocated to a CP and numbers not allocated to him, but which he nevertheless makes use of (e.g. routes calls to, etc.). We consider that a narrow interpretation of the term "rights of use" would be inconsistent with a purposive interpretation of the Authorisation Directive.

A13.51 Turning to Vodafone's and Three's detailed textual arguments, they both disagreed with our view that Annex A(4) of the Authorisation Directive and Article 28(1) USD were consistent with a wider interpretation of the term "rights of use". With respect to Three's comment, it considers that the presence of the condition regarding end-user access to numbers in Part A, rather than Part C, of the Annex supports a narrow interpretation. However, it does not further explain why it considers this to be the case and we do not agree with this submission. By virtue of Annex A(4), the Community legislature has empowered NRAs to impose a condition on all CPs (including OCPs) requiring them to provide end-user access to numbers. In our view, the Community legislature would not have enacted such a provision if it considered that OCPs would be unable to fulfil this obligation as a result of not having a right to use the numbers in question.[399]

A13.52 Three has also contended that the "rights" to which the Authorisation Directive refers are transferrable, tradeable and granted following an administrative procedure and that this is not consistent with a right of an OCP to convey a call to a number. However, we do not consider that this is an accurate reflection of the provisions of the Directive in relation to rights of use for numbers. In particular, we

[398] We also note that the language used in Annex C(1) ("*tariff principles and maximum prices*") is often used in the context of controls on retail prices. In particular, throughout the directives within the Common Regulatory Framework, the term "tariff" is used only in the context of prices charged to end-users and consumers. See for example: recitals 10, 26, 30, 38, 41 and 49 and Articles 9, 17, 20, 21 and 30 of the Universal Service Directive; Article 4(d) of the Framework Directive; recital 18 of Directive 2002/58 on the processing of personal data and the protection of privacy in the electronic communications sector; recitals and Articles 4, 4b, 6, 6a and 11 of the Roaming Regulation (Regulation 717/2007); and recitals 17, 32 and 36 of Directive 2009/136/EC amending the Framework, Access and Authorisation Directives.

[399] We address at paragraph A13.67 below, Vodafone's comment that OCPs only have a right to use a number range where this has been facilitated by the range holder through an interconnection agreement.

observe that Article 5(2) says: "When granting rights of use, Member States shall specify whether those rights can be transferred by the holder of the rights, and under which conditions." It is therefore not necessarily the case that rights of use for numbers which are granted will be transferrable and tradeable, as Three has contended.

A13.53 We also consider that there are other provisions of Article 5, which suggest that the "rights" to which the Directive refers are broader than those granted following an administrative process. Specifically:

13.53.1 Article 5(2) says "*Where it is <u>necessary</u> to grant individual rights of use for...numbers, Member States shall grant such rights, upon request, to any undertaking for the provision of networks and services...*" (emphasis added). This implies that the "rights" to which the Directive refers are not limited to individual rights granted by Member States. This is consistent with the fact that the Numbering Plan (and the numbering plans of other Member States) will contain certain numbers which all CPs make use of, but which are not individually granted (or allocated) to any particular CP (for example, 999, 100, 1471).[400]

13.53.2 Article 5(5) says "*Member States shall not limit the number of rights of use to be granted, except where this is necessary to ensure the efficient use of radio frequencies...*". Again, we consider this provision confirms that it is appropriate to construe the "rights" under the Directive broadly so that, to the extent practicable, rights to use numbers are generally available to CPs.

A13.54 Accordingly, we consider that other provisions of the Authorisation Directive support, rather than contradict our view that the obligation in Annex A(4), when read in conjunction with the obligation of the UK and Ofcom under Article 28 of the Universal Service Directive to take all necessary steps to secure that "*end users are able to access and use services using non-geographic numbers within the Community*", is consistent with a wide application of rights of use of numbers. Further, we consider that this is consistent with the approach that the UK and Ofcom have adopted in implementing their obligations under the Common Regulatory Framework for the reasons set out in paragraphs A13.60 to A13.69 below.

A13.55 As noted above, we said in the April 2012 consultation that a narrow interpretation could defeat the consumer protection purpose of Annex C(1) to the Authorisation Directive, as it would be harder to demonstrate that controls on wholesale charges would ensure a high level of consumer protection. Vodafone considered that this argument was not credible in light of our proposal to impose an access condition on OCPs, which it contended was an exercise of our powers under Annex A(3) of the Authorisation Directive, and which it said empowered us to attach conditions to the use of numbers governing interoperability and interconnection. This is incorrect. We are proposing to impose an access condition on TCPs (not on OCPs as Vodafone suggested) under section 74 of the Act / Article 5 of the Access Directive.[401] We are not proposing to exercise our powers under Annex A(3) of the Authorisation Directive which is a condition that may be attached to the general

[400] See Part C of the Numbering Plan. Parts C1 to C4 contains lists of telephone numbers which are made available for use without allocation to an individual CP.

[401] See April 2012 consultation, Part C, paragraphs 17.121 – 17.123. See also the discussion of the access condition in Section 6.

authorisation (rather than a condition to be attached to the use of numbers, as Vodafone suggested).

A13.56 With respect to Three's comment, we did not rule out the possibility that a wholesale condition might in some circumstances satisfy the consumer protection requirement. Rather, we considered that it would be much harder to satisfy. We do not agree with Three that it is necessary to limit the power under Annex C(1) to wholesale regulation in order to secure consistency with the general approach of the Common Regulatory Framework for the reasons set out in this Annex. Three appears to base its comment on the fact that the power is one of price regulation, and therefore makes an assumption that it should be subject to the same (or similar) pre-conditions as the NRA's powers to price regulate undertakings with SMP. We address in paragraphs A13.97 to A13.98 below Three's contention that exceptional and compelling circumstances must exist before the power, as implemented in section 58(1)(aa) of the Act, can be exercised.

A13.57 We have noted above that a narrow interpretation of "rights of use" would be inconsistent with a purposive interpretation of the Authorisation Directive. It would also be contrary to the EC's apparent expectation that retail prices for specific number ranges can be regulated. In particular, its decision harmonising the use of 116 numbers[402] sets out conditions that must be attached to the "rights of use" for these numbers, including the requirement that they are Freephone numbers.[403] Working documents demonstrate that the EC considered that NRAs were empowered to regulate charges levied on end-users for calls to 116 numbers:

"In accordance with Article 6 of the Authorisation Directive, conditions may be attached to the use of numbers. In particular, condition C.1 allows the designation of service for which the number shall be used, including any requirements linked to the provision of that service. This allows NRA[s] to attach tariff conditions to the assignment of 116 numbers, e.g. that they shall be free to the caller."[404]

This is consistent with a wide interpretation of the term "rights of use", contrary to that put forward by Vodafone and Three.[405]

[402] EC Decision of 15 February 2007 on reserving the national numbering range beginning with '116' for harmonised numbers for harmonised services of social value (2007/116/EC) ('116 EC Decision')

[403] Article 2 and Recital 3, 116 EC Decision. The EC's working documents show that 116 numbers were originally intended to be free-to-caller (see EC Communications Committee, Draft Commission Decision on reserving the number range beginning with 116 for harmonised numbers for harmonised European services (COCOM 05-33), 30 September 2005: https://circabc.europa.eu/sd/d/3e929f19-a94a-40de-b3a7-09bacfd5ccae/COCOM05-33%20116.pdf). The requirements of the final Decision were changed to 'Freephone' in recognition of the different arrangements that apply in different countries, such as the UK. However, the EC nevertheless stated that these numbers should 'ideally' be free-to-caller (see EC Communications Committee, Commission Decision on reserving the number range beginning with "116" for harmonised numbers for harmonised services of social value to European citizens (COCOM 06-30), 22 January 2007, Annex 1, page 2: https://circabc.europa.eu/sd/d/2480503b-a12d-4e74-bc50-a32c980af3d8/COCOM06-30%20ANNEX%201%20116%20concept.pdf).

[404] EC Communications Committee, Guidelines on implementation and roadmap for Commission Decision on reserving the number range beginning with "116" for harmonised numbers for harmonised European services (COCOM 06-24), 15 June 2006, section 7.2 (page 7): https://circabc.europa.eu/sd/d/e1cc0221-8b63-41d6-84af-2b1ec975238e/COCOM06-24%20116.pdf

[405] We also note that the 080 range is free-to-call in many EU Member States (see Table 16.5, Part C, page 48 of the April 2012 consultation). Again, we would query how this has been achieved without a power for the NRA to regulate the retail tariffs for these calls.

A13.58 We also note that a recent BEREC report on special rate services (i.e. NGCS) identified several potential approaches that NRAs might use to address the possible problems identified in this market (including an equivalent to our proposed unbundled tariff approach). In discussing the legal instruments that might be used, BEREC referred to four types of symmetric regulation; namely: (i) Article 5 of the Access Directive; (ii) Part C of the Annex to the Authorisation Directive; (iii) Article 21 of the Universal Service Directive, and (iv) Article 28 of the Universal Service Directive.[406] These correspond to the legal powers that we are minded to use to implement the unbundled tariff and the free-to-caller approaches. As such, the legal approach that we are minded to take should not be viewed as novel or lacking in precedent.

A13.59 Finally, we note that the UK Government has transposed Annex C(1) of the Authorisation Directive into domestic law in a manner which is consistent with our interpretation (see paragraph A13.10 above).

(ii) Consistency with domestic legislation and the General Conditions

A13.60 We turn now to Vodafone and Three's arguments regarding the consistency of a wider interpretation of the term "rights of use" with the provisions of the Act and the General Conditions.

A13.61 As set out above, we consider that when the obligation in Annex A(4) of the Authorisation Directive is read in conjunction with the obligation of the UK and Ofcom under Article 28 of the Universal Service Directive to take all necessary steps to secure that "end users are able to access and use services using non-geographic numbers within the Community", a wide application of rights of use of numbers is appropriate. Further, as we stated in the April 2012 consultation, we consider that this is consistent with the approach that the UK and Ofcom have adopted in implementing their obligations under the Common Regulatory Framework.

A13.62 First, section 57(1) of the Act gives us the power to make conditions as we consider appropriate to secure that end users of a public electronic communications service are able to make calls, by means of that service, to every telephone number made available in the Numbering Plan and which is in use.

A13.63 Second, Part C of the Annex to the Authorisation Directive, which sets out the maximum list of conditions which may be attached to "rights of use" for numbers, has been transposed into national law by sections 58(1) and (2) of the Act.[407] However, these sections do not restrict us to imposing general conditions in relation to numbering only on the CP that has been allocated the number in question (which would be consistent with a narrow interpretation of the term "rights of use"). Our powers are construed more widely than this. In particular, we note that:

[406] BEREC, *Report on special rate services*, 24 May 2012, section 6: http://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/338-berec-report-on-special-rate-services_0.pdf. BEREC also referred to SMP regulation and dispute resolution as alternative legal approaches and considered that the choice of the appropriate legal approach should be left to each individual NRA in light of national circumstances.

[407] See Appendix 3 to the Explanatory Notes to the Act, which contains the transposition tables that identify how the requirements of the Common Regulatory Framework (as originally enacted) have been dealt with in the Act.

13.63.1 section 58(1)(a), empowers us to "prohibit the adoption of a number by a CP except in cases where the numbers have been allocated by Ofcom to a person";

13.63.2 section 58(1)(b) gives us the power to regulate the use by a CP of numbers that have not been allocated to it; and

13.63.3 section 58(1)(d) gives us the power to impose requirements in connection with the "adoption" of numbers by a CP.

A13.64 With respect to sections 58(1)(a) and (d), the concept of "adoption of a telephone number by a communications provider" is defined in s.56(6) of the Act and covers a range of activities including, in particular, "*using that number for identifying a service or route used by that provider or by any of his customers*".[408] We therefore consider that the adoption of a number is not restricted to activities carried out by the CP that has been allocated the number in question, but can also encompass activities carried out by an OCP such as routing calls to that number.

A13.65 We therefore infer from these provisions that:

13.65.1 CPs would have a right to use telephone numbers in the Numbering Plan unless Ofcom has exercised its powers to make conditions under section 58(1)(a) to prohibit such use; and

13.65.2 Ofcom has powers to impose conditions on a CP in relation to the adoption and use by that CP of numbers that have not been allocated to it.

We therefore consider this to be consistent with a wider interpretation of the term "rights of use".

A13.66 Turning to the conditions that Ofcom has made in exercise of these powers, we note that GC17.2 provides that a CP may only use a number from the Numbering Plan where it has been allocated by Ofcom to a person or to indicate that it has not been allocated. We consider that the only reasonable interpretation of this condition, given our duty under Article 28 of the Universal Service Directive, our power under section 57(1) of the Act, and the inference set out at paragraph A13.65.1 above is that all CPs have a right to use a number made available in the Numbering Plan, subject to any specific conditions Ofcom may impose in accordance with section 58 of the Act and Part C of the Annex to the Authorisation Directive.

A13.67 With respect to Vodafone's comment that an OCP will only have a right to use or access a number range where the range holder has facilitated this through an interconnection agreement, we acknowledge that an OCP will not exercise its right of use until it is authorised by a range holder to route calls to the numbers that it holds.[409] Furthermore, as Vodafone observes, GC17.1 prohibits the CP adopting a number unless it is allocated the number in question by Ofcom or secures authorisation, directly or indirectly, from that CP. In our view, it does not follow from this that only the TCP has a right of use in relation to the number and that "rights of use" should therefore be given a narrow interpretation. As set out above, we consider that the effect of the domestic provisions in relation to numbers in the

[408] Section 56(6)(b) of the Act

[409] We note, however, that this is not achieved exclusively through an interconnection agreement between the range holder and OCP, given that not all CPs are directly interconnected and some OCPs will therefore route calls to the range holder through transit providers.

Numbering Plan is that all CPs have a right to use numbers made available in the Plan pursuant to GC17.2. However, the exercise of that right, by adopting the number (as that term is defined in section 56(6) of the Act), is conditional on meeting the requirements set out in GC17.1 and compliance with specific conditions attached to the right by Ofcom under section 58.[410]

A13.68 Hence, we do not agree that the requirement that an OCP is authorised by the range holder before it adopts a number precludes us from regulating an OCP's retail charges, as Vodafone suggests. As discussed above, sections 58(1)(b) and (d) explicitly permit us to impose general conditions on CPs in relation to numbers that they have not been allocated, but which they nevertheless have a right to use or adopt. The requirement to obtain authorisation is therefore just a condition of the right to use, not determinative of the existence of the right.

A13.69 Section 58(1)(aa) permits us to impose tariff principles and maximum prices in relation to the provision of an ECS by means of numbers adopted or available for use. In each case, the obligations would bite on a CP that is adopting (or using) the numbers in question. When an OCP enables its customers to call a number, routes the call to that number and bills the customer for the call then it is adopting the number in question and the obligations in question (including any tariff principles or maximum prices that are imposed) will therefore apply to it.

A13.70 Vodafone considered that our analysis would give us a near unfettered right to regulate retail origination charges. We do not agree with this, as explained in further detail under paragraphs A13.97 to A13.103 below.

A13.71 Three also considered that a wide interpretation of the term "rights of use" was inconsistent with the General Conditions, but provided no further detail or examples to support this submission. For the reasons set out above, we consider that the General Conditions are consistent with a wide interpretation of "rights of use".

Retail regulation as a last resort

A13.72 As set out above, we consider that the language used in Annex C(1) of the Authorisation Directive clearly anticipates the imposition of controls on retail prices in the form of "*tariff principles and maximum prices*".

A13.73 In the April 2012 consultation, we said the power to impose such retail controls in relation to an ECS provided by means of a telephone number was not constrained by other provisions of the Common Regulatory Framework so that it could only be exercised in relation to CPs which have SMP and where wholesale regulation has proved ineffective. In reaching this view we observed that:

13.73.1 the conditions that may be imposed under Article 6(1) of the Authorisation Directive are distinct from SMP conditions that may be imposed in relation to retail services under Article 17 of the Universal Service Directive;

13.73.2 SMP conditions under Article 17 of the Universal Service Directive may only be imposed following a market review carried out in accordance with Articles 15 and 16 of the Framework Directive. That does not apply to the

[410] We note that Vodafone appears to accept that OCPs have a right of use of a number (which they have not been allocated) once they have been authorised by the range holder. However, it does not explain how this is consistent with its narrow interpretation, which confines Ofcom's power to attach conditions to rights of use of numbers to the rights allocated to the TCP.

imposition of conditions within the scope of Parts A and C of the Annex to the Authorisation Directive;

13.73.3 the purpose of Article 17 of the Universal Service Directive, is to enable the NRA to tackle behaviour by an undertaking with SMP which serves to "inhibit entry or distort competition, for example by charging excessive prices, setting predatory prices, compulsory bundling of retail services or showing undue preference to certain customers";[411] an SMP condition imposed under Article 17 should be designed to secure, as a key objective, the promotion of competition[412] (emphasis added);

13.73.4 in contrast, the trigger for conditions falling within Annex C(1) of the Authorisation Directive, is not an absence or weakness of competition but ensuring a high level of protection for consumers in their dealings with suppliers, as set out in Article 8(4)(b) of the Framework Directive;

13.73.5 the retail price controls that the NRA may impose under Article 17 are much more extensive than those that can be made the subject of a condition falling within Annex C(1) of the Authorisation Directive. In addition to retail price caps, the imposition of measures to control individual tariffs, cost-orientation obligations and benchmarking are also permitted under Article 17. In contrast and consistent with the fact that it has a different policy focus, the relevant provision of the Authorisation Directive only appears to allow for retail price controls in the form of "tariff principles and maximum prices that apply in the specific number range".

A13.74 We therefore reached the view that the power to set conditions in relation to rights of use for numbers under Article 6(1) of the Authorisation Directive, and to incorporate tariff principles and maximum prices under Annex C(1), is legally and conceptually distinct from the powers to impose SMP conditions under Article 17 of the Universal Service Directive. Provided the purpose of such a condition is consumer protection, rather than being targeted at the promotion of competition, we considered that it should be not be regarded as constrained by the requirements of Articles 14 to 16 of the Framework Directive.

A13.75 Vodafone disagrees with this view, arguing that if that were the case, the Community legislature would have been made explicit its intention to confer such a wide-ranging power. In support, Vodafone points to the recital 12 of the Roaming Regulation which says that the pricing rules introduced by regulation are "a departure from the rules otherwise applicable, namely that prices for service offerings should be determined by commercial agreement in the absence of significant market power".

A13.76 However, we consider that there are a number of distinguishing features of the Roaming Regulation that explain the explicit reference to the exceptional nature of the powers in the recitals of that legislation. These do not apply to the Authorisation Directive and therefore no inference can be drawn from the absence of an equivalent provision.

[411] Recital 26, Universal Service Directive
[412] See Article 17(2), Universal Service Directive, which empowers the NRA to apply measures "in order to protect end-user interests whilst promoting effective competition" (emphasis added).

A13.77 First, the wholesale market for international roaming was originally identified by the EC as a market susceptible to ex ante SMP regulation.[413] However, this was not sufficient to enable effective regulation of this market, due to the difficulties faced by NRAs in identifying CPs with SMP (in view of the cross border nature of roaming services) and controlling the actions of CPs in other Member States.[414] Accordingly, the international roaming market was withdrawn from the list of markets susceptible to ex ante SMP regulation in 2007, and the Roaming Regulation was enacted as an alternative means of regulating the provision of international roaming services.[415] The reference which Vodafone highlighted in recital 12 of the Roaming Regulation to the “rules otherwise applicable” therefore forms part of an explanation of the reasons for the enactment of the Roaming Regulation (this recital should be read in conjunction with recitals 3 to 11). We find the lack of a similar explanation in respect of Annex C(1) of the Authorisation Directive to be unremarkable, given that the same reasons do not apply to its enactment.

A13.78 Second, the subject matter of the Roaming Regulation is the control of prices for Community-wide services. In contrast, the subject matter of the Authorisation Directive is the harmonisation and simplification of the authorisation rules for CPs – the power to set conditions imposing tariff principles and maximum prices in Annex C(1) is just one of numerous different types of rules for which it makes provision.

A13.79 Third, the price controls implemented by the Roaming Regulation are far more interventionist than those that can be imposed pursuant to Annex C(1), regulating both wholesale charges and retail prices, imposing specific caps on the amount of both and making prescriptive rules in relation to the calculation of wholesale charges. These requirements are closely aligned in nature to the type of controls that may be imposed under the Universal Service Directive and the Access Directive following a finding of SMP. As noted above, that is not the case for the retail controls permitted under Annex C(1) of the Authorisation Directive.

A13.80 Finally, we note that the recitals to a Directive provide the reasons for the decision contained therein and can be used as a guide to interpretation (but are not themselves binding). However, we do not consider that the absence of a recital to a Directive can be relied upon as a guide to its interpretation, as Vodafone seeks to do.

A13.81 Accordingly, we do not consider that the absence of language in the recitals to the Authorisation Directive undermines either our interpretation that retail controls in the form of tariff principles and maximum prices may be imposed under Annex C(1) or the grounds we have put forward in paragraph A13.73 for concluding that the power to impose such controls is available if it is exercised for consumer protection purposes, even in the absence of SMP.

Supply of services versus wholesale / retail distinction

A13.82 We acknowledge that there are a number of services provided in connection with a call by a consumer to a non-geographic number and these are not confined to call origination. Indeed, as Vodafone notes, this is the underlying concept of the

[413] Market 17 of EC Recommendation of 11 February 2003 on relevant product and services markets within the electronic communications sector susceptible to ex ante regulation (2003/311/EC)
[414] Recitals 5 to 9, Roaming Regulation
[415] EC Recommendation of 17 December 2007 on relevant product and services markets within the electronic communications sector susceptible to ex ante regulation (2007/879/EC). See also section 4.3 of the Explanatory Note accompanying the Recommendation.

unbundled tariff policy and the basis of the tariff principles we are minded to impose in relation to the structure of the SC. As explained in Section 9 (for example paragraph 9.58), these tariff principles are intended to secure consumer understanding of the SC, which will be the price that is advertised to consumers for calling a non-geographic number to access the SP's services and the price that they will be billed for making the call (in addition to the AC they pay to their OCP). Accordingly, contrary to Vodafone's suggestion that the regulation of the SC is a wholesale measure and therefore not capable, under our analysis of fulfilling a consumer protection objective,[416] we are satisfied that the tariff principles we are minded to impose on the SC are for consumer protection purposes and therefore within the scope of our powers under section 58(1)(aa) of the Act.

A13.83 However, Vodafone also appears to suggest that the power to impose tariff principles and maximum prices is confined to the "primary" service provided to end users via non-geographic numbers, namely the service provided by the SP and TCP, such as a sales or helpline. We consider this interpretation to be incongruous. The consumer's primary relationship (at least in terms of the supply of electronic communications) is with their chosen telephony provider - the OCP. In the absence of unequivocal wording to the contrary, we consider that the provision of services by the OCP to the caller is within the scope of the power in Annex C(1) and the meaning of "supplier" in Article 8(4)(b) of the Framework Directive, to which the power makes reference.

Vodafone's alternative proposal

A13.84 On the basis of its view that the powers conferred by Annex C(1) of the Authorisation Directive should be construed narrowly, Vodafone has put forward an alternative proposal for implementing the decision that we are minded to take to make the 080 range free to caller. Specifically, Vodafone suggested that all regulatory obligations should be imposed on the TCP, which would be required to procure commercially that the OCP charges a retail price of zero. For the reasons set out above, we do not consider that the scope of our powers to impose a maximum retail price for calls to 080 is as narrow as Vodafone contends. Furthermore, we have a number of concerns about the effectiveness of Vodafone's alternative proposal and the regulatory burden that it may create. We therefore consider that Vodafone's approach would not be a proportionate way of implementing the decisions we are minded to take.

A13.85 The concerns that have led us to this view are as follows:

13.85.1 First, given that we believe we have the power to directly regulate the retail price charged by OCPs, we consider it that it may be unnecessarily burdensome to instead impose all regulatory obligations on the TCP and require them to procure action on the part of OCPs through commercial negotiations and agreement.

13.85.2 Second, if an OCP did not zero-rate calls to 080 numbers, we would have no means of directly enforcing this requirement. Having identified concerns in the retail market and concluded that intervention is appropriate and proportionate, we do not consider it satisfactory to design that intervention in such a way that we would have no direct means of securing compliance by CPs retailing calls to 080 numbers.

416 Vodafone, April 2012 consultation response, paragraph 4.5

13.85.3 Third, when we asked Vodafone how we might deal with this, it told us that it considered that enforcement was unlikely to be a major issue in practice. It suggested that only very small mobile OCPs might decline to zero-rate their 080 calls and that, in such circumstances, the TCP could refuse to accept 080 traffic from the CP because it would be in breach of its interconnect agreement.[417] However, this denial of access would adversely impact the CP's retail customers and would run contrary to the aim of our regulatory intervention, which is for consumer protection purposes. We would also not encourage or condone a denial of access to callers, given our duty under Article 28 of the Universal Service Directive to take all necessary steps to secure that end users are able to access and use services using non-geographic numbers. Furthermore, it is unclear how such a denial of access would be reconciled with the TCP's obligation under General Condition 20 to ensure that end-users are able to access non-geographic numbers where technically and economically feasible.

13.85.4 Fourth, there may be no direct interconnect agreement between the TCP and OCP in question, as traffic may instead be routed through a transit operator such as BT. Vodafone's proposed approach may therefore require the regulatory obligations to be replicated through multiple commercial agreements. We consider this to be impractical and that it is likely to exacerbate the issues outlined above.

A13.86 Vodafone has argued that its proposed approach is no different from that taken in other areas such as General Condition 23, which requires it to pass on certain regulatory obligations to its mobile phone retailers.[418] However, Vodafone's example relates to the passing on of obligations to its third party sales agents. By contrast, Vodafone's proposed approach for achieving zero-rated 080 calls would require TCPs to procure action by OCPs, who are unavoidable trading partners with separate commercial objectives. We consider that the two situations are not comparable. In particular, we might require CPs to procure action on the part of their third party customers or agents in circumstances when we have no other means of securing action on the part of those third parties. However, it is unclear why we would require CPs to procure action by other CPs, when we can avoid this mechanism by means of direct regulation. In addition, General Condition 23 requires the passing on of sales and marketing obligations to those selling and marketing mobile services on Vodafone's behalf. The regulatory obligation is directly related to the commercial arrangement in question. However, this is not comparable to Vodafone's proposal for 080 where we would be asking TCPs to use their wholesale interconnect arrangements to procure that OCPs charge their own retail customers a specified amount for certain call-types. In that case, the commercial arrangements are not directly related to the regulatory obligations we would be seeking to pass-on.

A13.87 Vodafone also considered that we may use our powers under section 58(1)(aa) to mandate the mobile origination charge that must be paid by TCPs to OCPs (as an alternative to imposing an access condition on TCPs). However, section 58(1)(aa) (and Annex C(1) of the Annex to the Authorisation Directive) permits us to impose "*tariff principles and maximum prices*". We therefore consider that we only have the power to set a *maximum* origination charge, and that it would be open to parties to set a charge below this maximum level. Given the potential imbalances in negotiating power we have identified between certain OCPs and TCPs (see Section

[417] Meeting between Vodafone and Ofcom of 3 September 2012.
[418] Meeting between Vodafone and Ofcom of 3 September 2012

4 and Annex 9), we consider it possible that TCPs in a relatively strong bargaining position might seek to set a charge below the regulated maximum (particularly when negotiating with OCPs in a relatively weaker position). Vodafone's proposal may therefore not result in a single mobile origination charge applying across industry. To the extent that Vodafone contends that the ability to mandate a single charge makes its proposal more effective than our proposed access condition, then we do not agree (although we acknowledge in Section 14 that our proposed access condition may also not result in the emergence of a single mobile origination charge).

A13.88 Furthermore, our concern at the wholesale level is that a renegotiation of wholesale origination charges may lead to a risk of a breakdown or delays in connectivity, a period of uncertainty for SPs and potential distortions of competition (see Section 14. We do not consider that a power to set a maximum charge would address these concerns to the same extent as our proposed access condition. In addition, whilst the concerns we have identified would ultimately have detrimental effects on consumers, we consider that the nature of these concerns means that they are more appropriately addressed through an access condition (which is intended to secure end-to-end connectivity, resulting in "sustainable competition, interoperability of electronic communications services and consumer benefits"[419]), rather than our powers under section 58(1)(aa) (which are intended for consumer protection purposes).

A13.89 Vodafone commented that our proposed access condition does not reflect the commercial realities of interconnection. We address this comment in Section 14. Vodafone also contended that any retail price regulation must be accompanied by price regulation at the wholesale level in order to avoid the risk of OCPs facing the possibility of supplying call origination below cost. If we proceed to make the 080 and 116 ranges free-to-caller, then we are proposing to set an access condition at the wholesale level which requires origination charges to be fair and reasonable. We are also proposing to issue guidance as to how we would resolve any future dispute about fair and reasonable charges. Our draft guidance (on which we are consulting today) explicitly recognises that OCPs should not be denied the opportunity to recover their efficient costs of originating calls.

A13.90 Vodafone has separately contended that its analytical approach would also support implementation of the unbundled tariff on the other 08 ranges and 09, while Ofcom's would not. Our consideration of that argument is set out in paragraphs A13.82 to A13.83 above.

A13.91 We also disagree with Vodafone's contention that the regulation of the AC is limited to transparency measures, which are not dependent on section 58(1)(aa). As set out in Section 9 (for example see paragraphs 9.4), we consider that it is necessary to restrict the structure of the AC to secure consumer awareness of the charge. Accordingly, the modification of GC17 on which we are consulting includes tariff principles in relation to the structure of the AC. The power on which we rely in proposing these modifications is section 58(1)(aa) and our assessment that it may be exercised in relation to the retail price for the origination services provided by the OCP for calls to non-geographic numbers.

[419] Article 1(1), Access Directive

Meaning of consumer

A13.92 In line with the submissions made by EE and [✂], we accept that the definition of "consumer" in the Framework Directive is more narrowly drawn than the definition in section 405(5) of the Act and is confined to "any natural person who uses or requests a publicly available electronic communications service for purposes which are outside of his or her trade, business or profession".[420] Further, the power to impose conditions under Annex C of the Authorisation Directive in relation to rights of use for numbers is framed as a maximum requirement, i.e. Ofcom is not permitted to impose conditions going beyond those specified in Annex C.[421] Accordingly, the modifications we are proposing to make to the General Conditions to make the 080 and 116 ranges free to caller and to implement the unbundled tariff will apply only to calls made by consumers, defined in accordance with the definition of that term in the Framework Directive.

Wholesale market review as an alternative

A13.93 EE and Virgin Media considered that we should carry out a wholesale market review as an alternative to intervening at the retail level. We address these comments in Annexes 19 and 29. Three considered that, even if we intervene at the retail level, we should commit to carrying out a wholesale market review in the medium term in order to address ongoing issues at this level. We respond to this comment in Annex 30.

A13.94 In summary, we have identified a consumer detriment across the NGCS market as a whole, and consider that the exercise of our competition powers through specific wholesale regulation would not be appropriate to address the identified harm for the reasons set out in Annex 19 for the unbundled tariff and Annex 29 for making 080/116 free-to-caller. A more general approach is required, which, provided that it is justified under the Act (and the Common Regulatory Framework) is best achieved when considering remedies that apply across industry, such as those contemplated under the Authorisation Directive. We have set out in paragraphs A13.72 to A13.81 above our grounds for concluding that the power to impose tariff principles and maximum prices under section 58(1)(aa) of the Act is exercisable without a finding of SMP. These reasons also inform our view that it is not necessary to show that wholesale regulation has been ineffective before exercising the power under section 58(1)(aa). Further, as set out in the April 2012 consultation, the consideration of regulation through market reviews is one aspect of the Common Regulatory Framework. It operates without prejudice to consideration of whether access obligations or general authorisation conditions should be imposed.

A13.95 Our general duties under section 3 of the Act require us, in all cases, to have regard to the principle that regulatory intervention should be targeted only at cases where action is needed.[422] We have satisfied this duty by setting out in detail in this document the consumer harm arising from the current provision of NGCS and our reasons for provisionally concluding that the unbundled tariff and making 080 free to call are the appropriate means for addressing this harm.

A13.96 In relation to EE's comments that call termination to non-geographic numbers should be included in the fixed call termination market, as determined by our fixed

[420] Article 2(i), Framework Directive
[421] Article 6(1), Authorisation Directive provides that "The...rights of use for numbers may be subject only to the conditions listed in the Annex."
[422] Section 3(3) of the Act.

narrowband services market review, we refer to the proposal on which we are currently consulting that they should not be so included.[423] Further, this was also the outcome of our previous market review of fixed narrowband services, and no objection was raised by the European Commission under the Article 7 process.[424]

Proportionality / exceptional nature of powers

A13.97 Three considers that we should define the “limited and exceptional circumstances” in which we consider we have the power to regulate retail prices, absent a finding of SMP. Our powers under section 58(1)(aa) derive from a legislative amendment that was introduced to the Common Regulatory Framework for the specific purpose of consumer protection. We fully acknowledge that retail price regulation is intrusive and that it should only be imposed where strictly necessary. We are unable to fetter our discretion as to how we would exercise our power under section 58(1)(aa) in future but, in principle, we would only expect to use it in limited circumstances and where clearly necessary to protect consumers.[425]In addition, the exercise of this power is subject to several safeguards. Any conditions we seek to set or modify in consequence of this power must be objectively justifiable (save in respect of the setting of a general condition), proportionate, not unduly discriminatory and transparent (section 47(2) of the Act). In addition, we must also have regard to the principles of best regulatory practice which have been highlighted by EE (proportionality, consistency and targeting regulatory intervention only at cases where action is needed – section 3(3) of the Act).

A13.98 We explain in Section 6 how we have had regard to these requirements and principles in respect of the unbundled tariff and free-to-caller regimes. In particular, we summarise our objectives and explain why our proposed interventions are proportionate in light of these objectives. In terms of proportionality, our approach to section 58(1)(aa) has been to consider whether intervention is required in each particular circumstance in light of the evidence of harm that we have gathered. We have not taken a “one size fits all” approach. For example, we are not proposing to impose a cap on the AC element of the unbundled tariff nor on the SC for calls to the 118 number range, as we consider that this would be disproportionate in light of the evidence currently available to us. To the extent that we consider the exercise of section 58(1)(aa) in future, then this would also be evidence-based, targeted and proportionate in each individual case, and it would also be open to challenge on that basis by way of an appeal to the CAT.

A13.99 With respect to Vodafone’s concerns, we acknowledge that retail intervention triggered by a competitive objective will also be designed to protect consumers. However, in light of our principal duty to further the interests of citizens and consumers, all of our regulatory interventions can be ultimately traced back to the consumer interest. We do not agree that this renders invalid the distinction we sought to draw in the April 2012 consultation between retail price regulation following an SMP analysis and retail price regulation pursuant to section 58(1)(aa).

A13.100 The former is imposed as a consequence of a finding that one or more undertakings has SMP on a relevant market and must be based on the nature of the problem

[423] Narrowband Market Review, paragraphs 6.25 6.43

[424] EC’s comments to Ofcom under Article 7(3) of the Framework Directive, 16 October 2009 (2009/0974), at: https://circabc.europa.eu/sd/d/27a8cf7f-31db-4e46-b1ca-a8aefe330363/UK-2009-0974%20Acte.pdf

[425] We explain at paragraph A13.103 why we consider that section 58(1)(aa) cannot be used as an alternative approach to regulating undertakings identified as having SMP on a relevant market.

identified. In that context, the problem(s) identified will typically relate to the potential for the undertaking(s) with SMP to engage in excessive pricing, exclusionary behaviour, predatory pricing, unreasonable bundling or undue preference (Article 17(2), Universal Service Directive). As recital 26 and Article 17(2) of the Universal Service Directive make clear, remedies imposed following a finding of SMP have the twin objectives of "*promoting effective competition whilst pursuing public interest needs, such as maintaining the affordability of publicly available telephone services for some consumers*".

A13.101 Consistent with this, and as we noted in the April 2012 consultation, the retail price controls that may be imposed under Article 17 USD are more extensive than those permitted under section 58(1)(aa), including cost-orientation obligations, in addition to retail price caps. In contrast, the power to impose tariff principles and maximum prices under section 58(1)(aa) must be exercised for "*the purpose of protecting consumers*". While the promotion of effective competition may be a by-product of such a remedy (and we are of course required by our general duties under sections 3 and 4 to have regard to the desirability of that outcome), we do not consider that it is a "twin objective" necessarily to be given equal weight, as is the case for a remedy under Article 17. As we noted in the April 2012 consultation, the more limited nature of the remedial powers under section 58(1)(aa) is consistent with its narrower policy focus.

A13.102 We consider that our powers under section 58(1)(aa) are indubitably the appropriate regulatory tool, given our analysis of the NGCS market. As we have set out in Section 4 and Annex 8 there are features of this market, namely the market failures that we have identified, which are not related to the exercise of market power, and which give rise to consumer harm. As we have explained in Section 4 and Annex 9 neither WOCPs nor TCPs are likely to be in a consistently strong position at the wholesale level (rather, this will depend upon the particular WOCP and TCP involved in each bilateral relationship). Accordingly, a remedy to address the consequences of market power would not be not appropriate; in contrast, a remedy under section 58(1)(aa) to protect consumers from the market failures we have identified is justified for the reasons we set out in this document.

A13.103 Finally, we also note that we are <u>required</u> by Articles 15 and 16 of the Framework Directive to define markets (taking utmost account of the EC Recommendation) and to analyse those markets. If we conclude that one or more undertakings has SMP, then we are <u>required</u> to impose appropriate specific obligations (based on the nature of the problem identified) from those set out in Article 8 of the Access Directive or Article 17 of the Universal Service Directive (in the latter case, where the additional requirements set out in Article 17(1) of that Directive are met). On this basis, in circumstances where an undertaking has been identified as having SMP on a relevant market, we do not consider that section 58(1)(aa) could be used as an alternative to imposing appropriate remedies from those set out in those provisions.

Conclusion on legal powers

A13.104 As noted above, section 58(1)(aa) of the Act empowers us to impose tariff principles and maximum prices for the purpose of protecting consumers in relation to the provision of an ECS by means of the relevant number range. We consider that the power applies to any ECS provided by means of the number range, whether that ECS is provided by the OCP or the TCP. There is nothing in the drafting of section 58(1)(aa) which would cause us to construe the power more narrowly. We also consider that this interpretation is consistent with the Common Regulatory Framework and, in particular, with Article 6(1) and Annex C(1) of the Authorisation

Directive. We are therefore satisfied that we have the power to regulate retail tariffs insofar as necessary to introduce the unbundled tariff and free-to-caller regimes for the purposes of protecting consumers. However, we agree with stakeholder comments that the unbundled tariff and free-to-caller regimes should only apply to calls made by consumers.

A13.105 We do not consider that a wholesale market review nor Vodafone's/Three's alternative approach to regulation represent a more appropriate and proportionate means of intervention than a reliance on section 58(1)(aa) of the Act.

Other issues

A13.106 Other respondents raised legal issues and commented on the legal instruments required to implement our decisions. We have addressed these comments elsewhere in this document but, for completeness, we summarise them here, together with references to the relevant paragraphs where we set out our response in full.

A13.107 In response to the proposal that the SP's compliance with a code in relation to publication of the SC could be a term of its contract with the TCP, BT said that intervention should be as light touch as possible and that it would be disproportionate for BT to open up all its existing contracts with SPs to add this obligation.[426] A discussion of this issue and our response to BT's comment is at Annex 24.

A13.108 In relation to our proposals in relation to the setting of SC price points, [✂] noted the prohibitions on cartels and price fixing in EC and domestic law and urged that industry conversations on the SC should be properly monitored in order to avoid such accusations.[427] EE made a similar observation that there are potential competition law issues where prices are collectively set in an otherwise competitive market.[428] Our findings in relation to the SC and our response to these comments are at Annex 21.

A13.109 In relation to our question as to whether there is a need for additional regulatory intervention in relation to end-users' access to non-geographic numbers, [✂] contended that GC20 already imposes an end-to-end connectivity obligation and may not be compatible with allowing SPs to block higher cost calls.[429] TNUK submitted on this issue that there was already a breach of GC20 in respect of consumers being unable to access its DQ service. It considered that Ofcom should set the parameters of the exceptions to the obligations under that condition and, further, should set specific access conditions in relation to DQ to ensure callers' access.[430] EE, however, argued that GC20 goes further than required to implement the amendment to Article 28 USD, and that it should not be used as a backdoor means of imposing an end-to-end obligation regarding NGCS.[431] Our discussion of the obligations of GC20 and the comments from these stakeholders is at Annex 25.

A13.110 In relation to our proposals about the publication of the AC, EE observed that existing GCs about pricing and publication are unnecessarily burdensome and do

[426] BT, April 2012 consultation response, pp.21 – 22.
[427] [✂]
[428] EE, April 2012 consultation response, p.25.
[429] [✂]
[430] TNUK, April 2012 consultation response, pp.42 – 43.
[431] EE, April 2012 consultation response, p.30.

not ensure maximum benefit for consumers and submitted that Ofcom should be examining the potential for regulatory roll-back in this area.[432] Magrathea considered that the existing publication obligation in GC10 would not be effective if the AC were buried within multiple tariffs and suggested that the AC should be identified as a key charge for the purposes of GC23 and 24. It also proposed refinements to GC12 and GC14.[433] Our findings in relation to the publication of the AC and our responses to the points raised by EE and Magrathea on this issue are at Annex 24.

A13.111 UKCTA and Virgin asked Ofcom to clarify how GC9.6 would apply in relation to price changes resulting from implementation of the unbundled tariff.[434] These points are considered at Annex 25.

A13.112 Verizon considered that an access condition was disproportionate and discriminatory in light of the burden it places on the TCP and therefore outside of our powers under the Act.[435] Our assessment of the legal tests we must satisfy in order to impose an access condition is at Section 6.

A13.113 EE stated that our free-to-caller proposal met none of the legal requirements for it to be necessary, proportionate and consistent with our treatment of other number ranges.[436] Our assessment of the legal tests we must satisfy in order to make 080 free to caller is at Section 6.

[432] EE, April 2012 consultation response, p.31.
[433] Magrathea, April 2012 consultation response, p.9.
[434] UKCTA, April 2012 consultation response, pp.11-12.; Virgin, April 2012 consultation response, p.5.
[435] Verizon, April 2012 consultation response, p.3.
[436] EE, April 2012 consultation response, p.4.