Assessment of eir's calculation of intangible benefits for 2012/13

Final report

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1 Introduction

As part of its application to the Commission for Communications Regulation (ComReg) for funding in respect of the provision of the universal service obligation (USO) for the 2012/13 financial year, in July 2016 eir submitted a report prepared on its behalf by Frontier Economics ('Frontier'), which estimated and reported on the intangible benefits that accrued to eir as the universal service provider (USP) in 2012/13[1] (the 'Frontier Intangible Benefits Report'). ComReg has commissioned Oxera to review the Frontier Intangible Benefits Report.

Prior to the submission of the abovementioned Frontier Intangible Benefits Report, eir submitted an initial intangible benefits report, also prepared by Frontier (the 'initial Frontier Intangible Benefits Report').[2] Following Oxera's review of the initial Frontier Intangible Benefits Report and its supporting data, Oxera raised a number of queries and requests for clarification in relation to the approach used by Frontier. This led to a process of engagement between ComReg and eir during 2015, whereby eir engaged Frontier to provide ComReg with responses to Oxera's queries (the 'Frontier Responses').[3] This led to some changes in the methodological approaches to the calculation of intangible benefits and, therefore, to the final estimates included in the Frontier Intangible Benefits Report. These changes were set out in an Annex to the Frontier Intangible Benefits Report,[4] and where relevant they are also addressed in the individual sections of this Oxera report.

This Oxera report also refers to the Frontier Intangible Benefits Report for 2010/11 in certain instances, as it included a section with responses to Oxera's comments and recommendations on the 2009/10 application.[5] While those responses were not repeated in the Frontier Intangible Benefits Report for this application, they remain relevant to the current assessment as the methodology and the intangible benefits model eir uses for 2012/13 are the same as those used in its final 2010/11 USO funding application.[6]

The principles and methodologies for assessing whether the USO represents a net cost that places an unfair burden on the USP are set out in ComReg Decision D04/11[7] ('**D04/11**'). Decisions 31, 35, 36 and 37 deal with the calculation of intangible benefits.

In accordance with **Decision No. 31** of D04/11, the calculations submitted by Frontier on behalf of eir for the financial year 2012/13 set out:

[1] This report relates to eir's USO funding applications for both 2011/12 and 2012/13. See Frontier Economics (2016), 'Intangible Benefits of Universal Service Provision in Ireland – 2011/12 and 2012/13; A report prepared for eir', July.
[2] This was submitted in on 31 October 2014.
[3] Oxera (2015), 'Assessment of intangible benefits: Questions on Frontier's calculations and models',13 February; Oxera (2015), 'eircom/Frontier's calculation of intangible benefits of the USO: follow-up questions from workshop', 24 February; Frontier Economics (2015), 'Response to ComReg questions on eircom's intangible benefits from the USO; A report prepared for eircom', April; Oxera (2015) 'Further clarifications on intangible benefit calculations' 12 May.
[4] Frontier Intangible Benefits Report, Annexe 5, pp. 76–79.
[5] See the Frontier Intangible Benefits report for 2010/11 pp. 77–84 (Frontier Economics (2016), 'Intangible Benefits of Universal Service Provision in Ireland – 2010/11; A report prepared for eir', July).
[6] eir notes that the 2012/13 intangible benefits report 'is largely the same as the revised 2010/11 report, except for the updated results and removal of the comparisons of the current methodology against that used in 2009/10.' We also note that eir's final 2010/11 and final 2012/13 USO funding applications were both submitted to ComReg on 15 July 2016.
[7] ComReg (2011), 'Decision on the costing of universal service obligations: Principles and Methodologies', Decision D04/11, 31 May.

(a) the benefit (in monetary terms) that the USP derives as a commercial operator;

(b) the benefit (in monetary terms) that the USP derives as a result of the USO; and

(c) a reconciliation with reasoning to explain the incremental difference between (a) and (b).

eir's estimates and the final Oxera assessment of the intangible benefits are summarised in Table 1.1 below.

Table 1.1 Estimates of the intangible benefits for 2012/13

Intangible benefit	Initial eir application (€)	Final eir application (€)	Final Oxera assessment (€)
Enhanced brand recognition	1,536,276	1,002,351	1,002,351
Life-cycle	210,824	167,257	167,257
Ubiquity	32,805	11,144	11,144
Marketing	20,131	19,406	18,681
Total	**1,800,036**	**1,200,158**	**1,199,433**

Note: individual estimates for intangible benefits are rounded.

Source: Oxera analysis and Frontier Intangible Benefits Report.

Decision No. 35 of D04/11 states that 'the net cost calculation must assess the benefits, including intangible benefits, to the USP.' Where these positive effects exist, they should be deducted from the direct net costs of the USO to obtain the overall net cost (or benefit) of being the USP. Decision No. 35 also identifies four categories of intangible benefits which, at a minimum, should be taken into account: **brand recognition, ubiquity, life cycle and marketing benefits**.[8]

In identifying these benefits, **Decision No. 36** of D04/11 states that, for the identification of benefits, ComReg will observe the following key principles:

- the benefits represent effects on a USP of providing the USO which have not been accounted for in the direct costing methodology (for example, any benefits that are directly identifiable to specific revenue streams, including indirect and replacement call revenues are excluded having been covered by the direct net cost calculation);
- avoid the double counting of any benefits;
- the benefits are those accruing to the USP, as a consequence of being the designated USP (any benefit arising from the fact that the USP is a large player in the market is to be excluded from the calculations).[9]

Decision No. 37 of D04/11 states that 'the methodologies to assess the value of the benefits that will actually be used cannot be prescribed in advance of receiving an application for USO funding from the USP.' Decision No. 37 also states that 'ComReg will actively continue to evolve and refine a number of potential methodologies for the purposes of valuing the benefits of the USO.'

[8] ComReg (2011), op. cit., Decision No. 35.
[9] Ibid., Decision No. 36.

In reviewing the Frontier Intangible Benefits Report, we have focused on the following:

- Understanding and assessing eir's rationale for adopting the particular methodologies for estimating the value of the four identified benefits. This included assessing changes in the methodology used in eir's 2012/13 USO funding application primarily by reference to eir's intangible benefits report for the 2009/10 USO funding application (the 'WIK 2009/10 Intangible Benefits Report') [10] as the application for the previous year, 2011/12, is subject to ongoing consultation. In addition, Oxera has assessed whether there were any changes in the intangible benefits methodology used between eir's final 2011/12 and final 2012/13 USO funding applications.[11]
- Considering the extent to which Oxera's previous recommendations, which were in existence at the time of this application's submission and arose from Oxera's assessment of the WIK 2009/10 Intangible Benefits Report, have been incorporated.[12]
- Assessing eir's empirical analysis.
- Evaluating the consistency of eir's approaches with D04/11.
- Liaising with ComReg's consultants, TERA Consultants ('TERA'), in relation to its analysis of the direct net cost calculation for 2012/13. Oxera has liaised with TERA to ensure there is no overlap or double counting between revenues accounted for in the direct net cost and the intangible benefit estimates.
- Comparing eir's approach and estimates with international approaches.

Overall, we conclude that the approaches adopted by eir, and the estimates of the intangible benefits, are reasonable for inclusion in the calculation of the net cost to eir of providing the USO for the financial year 2012/13.

The remainder of this report is structured as follows:

- sections 2–5 review the four categories of intangible benefits identified in D04/11, i.e. enhanced brand recognition, life cycle, ubiquity and marketing;
- section 6 concludes;
- Annex A1 considers eir's methodology and calculation of intangible benefits in the context of international approaches.

[10] WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland; Report for eircom for the 2009/10 financial year', 30 November.
[11] As noted above, the Frontier Intangible Benefits Report relates to eir's USO funding applications for both 2011/12 and 2012/13. The methodologies and the intangible benefits model eir used in its final 2011/12 and final 2012/13 USO funding applications are the same, and both applications were submitted to ComReg on 15 July 2016. (Note: this was also the date of submission of eir's final 2010/11 USO funding application). [12] References in this report to 'previous recommendations' are references to recommendations made by Oxera following its assessment of the WIK 2009/10 Intangible Benefits Report. Oxera (2013), 'Assessment of WIK's calculation of intangible benefits', 1 February.
[12] References in this report to 'previous recommendations' are references to recommendations made by Oxera following its assessment of the WIK 2009/10 Intangible Benefits Report. Oxera (2013), 'Assessment of WIK's calculation of intangible benefits', 1 February.

2 Enhanced brand recognition

The benefits of enhanced brand recognition refer to the benefits that the USP enjoys from having a greater brand perception, goodwill and corporate reputation among customers, stakeholders and other parties as a result of the provision of various universal services that are the responsibility of the USP.

In 2012/13, as the designated USP in Ireland, eir was required to:[13]

- satisfy any reasonable request to provide a connection to the public telephone network at any fixed location;
- provide a comprehensive directory of subscribers, whether printed or electronic or both, and ensure that it is made available to all consumers and is updated at least once a year, and that a comprehensive telephone directory enquiry service is made available to all consumers, including users of public payphones;
- ensure that public payphones are provided to meet the reasonable needs of consumers in terms of geographical coverage, number of telephones, accessibility of such telephones to consumers with disabilities and the quality of services;
- ensure that consumers with disabilities can enjoy access to, and affordability of, publicly available telephone services (as specified by ComReg) equivalent to that enjoyed by other consumers;
- maintain affordability for vulnerable user groups, such as the elderly, those on low incomes, and consumers with disabilities;
- ensure consumers can monitor and control their expenditure.

D04/11 states that the benefit of enhanced 'brand recognition is often closely associated with brand loyalty, which allows the USP to gain and retain more customers than it would in the absence of the USO.'[14] Potential new customers may be more likely to choose the USP than its competitors owing to the benefits of eir's corporate reputation as a provider of USO services. Similarly, existing customers may be willing to pay a premium to be served by the USP and/or remain with it instead of switching to an alternative provider owing to its associated positive brand image.

2.1 D04/11

D04/11 outlines five possible methods for estimating the value of enhanced brand recognition:[15]

- use valuation multiplies implicit in the USP's transaction price;
- identify and capitalise cash flows generated by brand recognition, corporate reputation and goodwill;
- use the depreciated replacement cost;
- carry out primary research/survey data;

[13] ComReg (2012), 'The Provision of Telephony Services under Universal Service Obligations', Response to Consultation, Decision, 12/71, 29 June.
[14] ComReg (2011), op. cit., para. 4.14.
[15] Ibid., pp. 57–58.

- undertake regression techniques.

ComReg considers that one, or a combination, of these methods can be used to estimate brand value. It also notes that, given the practical challenges involved in using surveys and valuation approaches, it may be beneficial to use a combination of both to ensure a robust estimate.

eir uses two of the approaches identified in D04/11, by combining the survey data with a microeconomic model that estimates the additional cash flows that are generated from enhanced brand recognition.

2.2 eir's approach for the 2012/13 application

eir reports a total benefit due to enhanced brand recognition of €1.00m.

eir estimates the USO-induced brand benefit as the profit gain enjoyed by eir due to its USP status. It does this by estimating the difference between its actual profit—where eir is the USP and some subscribers are willing to pay a USO-related premium—and its profit in the 'counterfactual' scenario—where eir is no longer the USP and does not receive any USO-related premium.

eir uses a combination of the approaches outlined in D04/11. First, eir uses a customer survey to gather data to estimate the additional amount that subscribers are willing to pay for its services as a result of it being the USP. This is one of the key inputs into the calculation of the enhanced brand recognition benefit, and is referred to as lambda (λ). The results of the survey are then used to estimate the additional profit that eir can generate by being able to charge higher prices for its services as a result of the USO.[16] These steps are further described below.

2.2.1 Calculation of the additional willingness to pay for the USO

In 2014, eir commissioned a survey from Ipsos MRBI, an independent research company, the results of which it used to estimate the enhanced brand benefit for 2012/13.[17] This involved asking a sample of 1,538 eir residential fixed-line subscribers a series of qualitative and quantitative questions through a phone interview. The survey is designed to identify the subscribers who value the USO, referred to as marginal consumers. These customers are identified based on two approaches, as explained in Box 2.1.

[16] Frontier Intangible Benefits Report, p. 9.
[17] The same survey was also used to estimate the enhanced brand recognition for the 2010/11 and 2011/12 USO funding applications.

Box 2.1 Approach to identifying marginal consumers

Marginal customers are those who:

1. Are aware of eir's USO activities
   a. Are aware that eir is the USP (Q13); and/or
   b. Are aware that eir is the only provider of the majority of listed USO services (Q11)
2. Would feel negatively towards eir if it stops providing at least one USO service (Q14); and
3. Would be likely to switch to another provider if eir stops providing all of its USO services (Q16).

eir uses two different approaches to identify marginal consumers. Approach 1 identifies these customers based on the three questions above. Approach 2 differs from Approach 1 in that it excludes criterion 1b (Q11) from its determination of marginal customers.

eir uses the two approaches because it is concerned that Approach 1 could be overly selective and may not capture the marginal customers accurately. In particular, there might be eir customers that are aware that eir is the USP (1a above), while at the same time they might not be aware of some of eir's USO services (1b above). As eir notes, 'these customers could still feel negatively towards eir if it stops providing USO services to the extent they would consider switching away from eir. As such, these customers would be willing to pay a premium for the USO and eir would likely be able to extract this willingness to pay through its pricing.'

eir uses the midpoint of Approach 1 and Approach 2 to generate the central estimate for the enhanced brand recognition benefit.

Source: Frontier Intangible Benefits Report, pp. 16–17.

To calculate the willingness to pay for the USO, the marginal consumers are presented with a hypothetical scenario in which they decide to switch away from eir. They are given a choice between a provider that offers USO services, and another provider that does not offer these services but is identical in all other respects. They are then asked how much extra they would be willing to pay for the services of the provider that offers the USO services (Q17.2). This question is intended to separate out the willingness to pay for the USO from the willingness to pay for other eir attributes that contribute to its brand value.

For those customers who value the USO, their stated willingness to pay is considered, while all other respondents are treated as having zero willingness to pay. The estimated willingness to pay is then calculated by averaging over all respondents and dividing by their average monthly bill, in order to express the average willingness to pay as a percentage of the bill.[18]

Subscribers who receive a telephone allowance from the Department of Social Protection ('DSP') under the Household Benefits scheme are referred to as 'DSP subscribers'.[19] Those subscribers who do not receive such an allowance are referred to as 'non-DSP subscribers'. The willingness to pay, and enhanced brand recognition benefits, are estimated separately for DSP and non-DSP

[18] The average bill information was collected during the survey based on respondents' recollection rather than actual bills and expenditure.
[19] This effectively provides these customers with a discount on their fixed-line service bill. eir still receives the full bill amount for the services the customers use, but a proportion is paid by the DSP rather than the customer directly. On 1 January 2014 the DSP subsidy was stopped, although eir states that it continued to survey these customers separately because the subsidy was still in place in the financial year 2012/13. However, eir recognises that the survey data in 2014 for DSP consumers may not be a perfect proxy for their willingness to pay for the USO in the period when they received the DSP subsidy.

subscribers. The willingness to pay for DSP and non-DSP subscribers is presented in Table 2.1.

Table 2.1 Estimated USO premium (λ)

	DSP Approach			Non-DSP Approach		
Parameter	**1**	**2**	**Mid-point**	**1**	**2**	**Mid-point**
Number of respondents (after exclusions)[1]	[✂]	[✂]	-	[✂]	[✂]	-
Average willingness to pay (€/month)	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Average monthly bill (€)	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Willingness to pay (% of bill) (λ)	0.11%	0.45%	**0.28%**	0.23%	0.44%	**0.34%**

Note: [1] A total of 1,538 residential subscribers were surveyed. 1,092 customers remained in the sample after discarding surveys that were asked Q17.1 (described further below). Of those, 50 subscribers were excluded, as they were unable to provide an answer to the quantitative question in the survey or their stated willingness to pay for the USO was above their average monthly bill. Therefore, a total of 1,042 respondents were considered for the analysis. We note that there appears to be a minor error in the Frontier Intangible Benefits Report. It quotes [✂] DSP respondents under Approach 1, whereas the model reports [✂] subscribers.

Source: Frontier Intangible Benefits Report, p. 19.

Based on the survey, the willingness to pay for DSP subscribers was estimated as 0.28% and for non-DSP subscribers the willingness to pay was estimated as 0.34%.

2.2.2 Calculation of additional profits

The benefit from enhanced brand recognition is estimated by calculating the additional profits that eir can generate by being able to charge higher prices for its services as a result of the USO. This is the difference between eir's actual profit where some subscribers are willing to pay a USO-related premium and eir's profit in a counterfactual scenario where it is no longer the USP and therefore receives no USO-related premium.

The difference in profits is estimated by deriving a profit gain formula based on a microeconomic model. As explained above, eir considers a representative 'average' consumer and models eir's profit maximisation over the demand of this consumer under two scenarios: one in which eir is the USP, and one where it stops providing the USO services. This calculation is shown in Box 2.2 below.

Box 2.2 Profit gain formula for enhanced brand recognition

$$Profit\ gain = (p^* - \mathrm{c})q^* - (p^*(1-\ \lambda) + \lambda\frac{c}{2} - \mathrm{c})(q^* - \left(\frac{\lambda}{1-\lambda}\right)\frac{bc}{2}) -$$

$$-(p^w - c^w)\theta(\frac{\lambda}{1-\lambda})\frac{bc}{2}$$

Where:

- $b = \frac{q^*}{p^*-c}$ = the slope of the demand function;
- λ = the average additional willingness to pay for the USO across all subscribers (as a % of the bill);
- q^* = the current number of eir residential subscribers in economic areas;
- p^* = eir's current annual average revenue per user ('ARPU') for residential subscribers;
- c = the average avoidable cost per fixed subscriber line in economic areas;
- θ = proportion of retail customers that eir acquires as a result of being the USP that would otherwise be eir wholesale customers;
- $(p^w - c^w)$ = eir's current annual margin for wholesale subscribers.

Source: Frontier Intangible Benefits Report, pp. 11–12.

The formula is derived based on a microeconomic model using a number of assumptions:

- eir considers its average representative subscriber when setting its prices;
- the representative subscriber has an average willingness to pay for the USO (calculated based on survey data);
- demand functions are linear. In moving from the actual to the counterfactual scenario, the inverse demand function rotates inwards, such that at each quantity the willingness to pay in the counterfactual scenario is (1 – λ) times the willingness to pay in the factual scenario;
- cost function is assumed to be linear. This means that the variable costs per fixed-line subscription are constant;
- eir sets price and quantity to maximise profits. The current price level therefore corresponds to the profit-maximising equilibrium price given the current demand curve. In the counterfactual scenario, the price charged is the profit-maximising equilibrium price given the new demand curve.

eir's approach also takes account of the difference in profits that it is able to generate from different types of customers. In particular, it assumes that:

- a proportion of retail customers that eir acquires as a result of being the USP would otherwise be served by eir's wholesale customers; and
- eir would generate a wholesale margin on these customers.

Any shift of customers from other operators to eir therefore increases eir's retail revenue, but decreases its wholesale revenue. eir only gains the difference between its overall margin and its wholesale margin on each customer it acquires as a result of the USO.

The different parameters that are used to estimate the benefit are set out in Table 2.2.

Table 2.2 Estimates for enhanced brand recognition

Parameter	**DSP**	**Non-DSP**
Willingness to pay for USO (% of bill), λ	0.28%	0.34%
Total number of residential subscribers living in economic areas	[✂]	
Percentage of subscribers	[✂]	[✂]
Number of subscribers, q*	[✂]	[✂]
Annual ARPU, p*	[✂]	[✂]
Annual avoidable costs per fixed line per year (in economic areas), c	[✂]	[✂]
Slope of the demand function, b	[✂]	[✂]
Adjustment for wholesale profits	[✂]	[✂]
Estimated profit gain	**310,295**	**692,056**

Note: The total number of residential subscribers refers to the total of DSP and non-DSP subscribers. These are then apportioned by the percentage of subscribers in each category to estimate the number of DSP and non-DSP subscribers.

Source: Frontier Intangible Benefits Report, pp. 21–22.

Based on these estimates, eir reports a total benefit due to enhanced brand recognition of €1.00m.

2.3 Oxera's assessment

eir's high-level principles for estimating the enhanced brand benefit are consistent with the principles followed in the WIK 2009/10 Intangible Benefits Report, however, the specific model used is different and the application of the principles has been modified to take account of Oxera's previous recommendations. We also note that the methodology for calculating enhanced brand recognition benefits and the intangible benefits model eir used for 2012/13 are the same as those used in its final 2011/12 USO funding application.

Changes were made by Frontier to the calculation of enhanced brand recognition due to queries raised by Oxera, as detailed in the Frontier Responses. This resulted in the estimates set out in the Frontier Intangible Benefits Report decreasing from €1.54m to €1.00m. For example, eir changed the specification of the demand function and corrected spreadsheet errors. TERA also recommended some changes to the source models (e.g. Area and Customer Models). As these models feed into the calculation of intangible benefits, this also contributed to the change in the estimate.

The rest of this section considers different aspects of the theoretical framework and empirical estimation of enhanced brand recognition.

Theoretical framework

Based on a previous recommendation from Oxera, eir revised its microeconomic model so that the profit gain is implicitly dependent on the number of subscribers who value the USO through the calculation of the willingness to pay for the USO. In the 2012/13 application, lambda (λ) represents the average willingness to pay over all subscribers—those who are willing to pay for the USO brand, and those who are not. As a result, the more subscribers who value the USO, the greater the average willingness to pay, and thus the greater the estimated profit gain.

The purpose of this change was to ensure that the enhanced brand recognition model does not yield counterintuitive predictions. In particular, the change leads to a more intuitive approach for estimating the enhanced brand recognition, as the benefit is now dependent on the proportion of subscribers who value the USO. We consider that this is an improvement on the approach adopted in the WIK 2009/10 Intangible Benefits Report.

Sample size

Based on a previous recommendation from Oxera, eir doubled the sample size for the 2012/13 application to 1,538. However, only 1,092 respondents were ultimately considered for inclusion in the analysis, because one of the questions (Q17.1) used to identify the willingness to pay for the USO led respondents to overestimate their true willingness to pay.[20] Therefore, another question measuring the willingness to pay for the USO brand more directly was used to estimate the willingness to pay for the USO (Q17.2). We agree that the wording in Q17.2 is more likely to yield more accurate and reasonable responses to assess willingness to pay for the USO brand.

Ultimately the stated willingness to pay of 58 DSP and 160 non-DSP subscribers was used when estimating the additional willingness to pay for the USO under Approach 1, and the stated willingness to pay of 20 DSP and 58 non-DSP consumers was included in Approach 2 (see Box 2.1 above). This is due to the fact that only these respondents were considered to be marginal customers.[21] Oxera would have more confidence in drawing conclusions from the results, and would consider the results to be more reliable, if larger sample sizes could be used.

Survey questions

We also note that some people were asked Q16A and others Q16B even though the final approach used to estimate the willingness to pay did not require customers to be split into two samples.[22] The use of Q16B could cause confusion among respondents as it would require them to consider multiple scenarios. In addition, while we acknowledge that a number of the qualitative questions in the survey are used to understand customers' feelings towards the USO, a number of questions seem to serve the same purpose.[23] The responses to these questions are not directly used by Frontier in estimating the willingness

[20] After eir reviewed the first (approximately) 500 responses, it was determined that asking about willingness to pay for the USO indirectly through the question about the 'required discount not to switch from eir' (Q17.1) led to unreasonable responses and inflated estimates of the true willingness to pay for the USO brand. For example, some respondents stated that, if eir stopped providing the USO and there was an alternative provider offering exactly the same services as eir (excluding the USO), they would require a discount to stay with eir, which was in excess of their current bills.

[21] This response was provided in the Frontier Intangible Benefits Report for 2010/11 (p.79). This response remains relevant for the 2012/13 application as the same survey was used in the USO funding applications from 2010/11 to 2012/13.

[22] Q16A asks: 'assuming there is no impact on the services that you receive, how likely or unlikely would you be to switch to another provider that offers exactly the same services that eir currently provides you?'. Q16B asks: 'assuming there is no impact on the services that you receive how likely or unlikely would you be to switch to another provider that offers exactly the same services that eir currently provides you, but also provides the full range of universal services including those that eir has stopped providing?'.

[23] For example, Q15 asks (in qualitative terms) about the willingness to pay for eir's services in the event of a reduction in the scope of services. This is similar to Q14, which asks customers about their feelings directly, and is therefore a more appropriate measure of customers' feelings towards the USO. Q14 is also ultimately used to identify marginal customers.

to pay for the USO and Oxera recommends that consideration be given to omitting these questions from the survey the next time it is commissioned.

Inclusion of business customers

Following a query from Oxera in relation to the initial Frontier Intangible Benefits Report, eir confirmed in the Frontier Responses that the estimate of the enhanced brand recognition does not capture the benefit from eir's business customers. It states that this is consistent with the approach taken in other jurisdictions (i.e. the UK and France). eir notes that business customers are much less likely to assign value to the USO than residential customers, as it is reasonable to assume that the main objective of business customers is to maximise profits. It is also unlikely that customers of a company would be aware of the company's choice of fixed telecoms supplier.[24] Therefore, businesses would choose their fixed telecoms supplier based on the optimal combination of price and quality irrespective of whether the supplier is the USP. We consider that this approach is reasonable for this application given the relatively small number of business customers.

We asked eir to clarify why the number of eir subscribers is based on the number of eir's fixed lines as opposed to the number of eir accounts. In the Frontier Responses, eir stated that the difference in the number of lines and the number of accounts has a very marginal impact on the estimated intangible benefits.[25] In addition, eir clarified, and we agree, that for the purposes of estimating intangible benefits the number of lines was used consistently throughout the calculations.

Finally, we note that different data has been used to split DSP and non-DSP customers and to calculate the average revenue per user ('ARPU') for DSP and non-DSP customers. The same data should be used for consistency purposes. However, a sensitivity test shows the difference is not material.[26]

2.4 Summary

Oxera considers that the approach adopted by eir to estimate the USO-induced brand benefit is reasonable, and overall the application of the approach is in accordance with D04/11 and fit for the purpose of assessing the intangible benefits and overall net cost of the USO. We consider that the value estimated by eir for the enhanced brand benefit of €1.00m is reasonable for the 2012/13 application.

[24]This response was provided in the Frontier Intangible Benefits Report for 2010/11 (p.79). This response remains relevant as the methodology for calculating enhanced brand recognition benefits, and the intangible benefits model eir uses for 2012/13, are the same as those used in its final USO funding applications from 2010/11 to 2012/13.

[25] We have been unable to test the impact of the assumption on the estimate of enhanced brand recognition, as the intangibles model is based on data for individual fixed lines.

[26] Changing the data used to split DSP and non-DSP customers for the 2012 and 2013 calendar years to the number of lines used to calculate the ARPU for DSP and non-DSP customers reduces the estimate of enhanced brand recognition benefit for 2012/13 by €2,781.

3 Life-cycle benefits

Life-cycle benefits arise when a proportion of the subscribers who are currently unprofitable become profitable in the future as a result of changes in their usage of phone services. It may therefore be beneficial for the USP to provide services to these customers in the short term in order to reap the future benefits when they become economic.

3.1 D04/11

In D04/11, ComReg stated that customers who become profitable over their lifetime should be considered an intangible benefit.[27]

To calculate this benefit, information on customers who are currently uneconomic but may become profitable in the future is required. It is important therefore to link household telephone expenditure with characteristics that vary over time, such as the age of customers.

3.2 eir’s approach for the 2012/13 application

eir estimates the life-cycle benefits in the financial year 2012/13 to be €0.17m.

eir uses a net present value approach to estimate the profits generated from uneconomic customers in each year over their lifetime, based on forecasts of future volumes, prices and avoidable costs. The present value of this stream of profits is then calculated for each customer. Customers who have a positive net present value (from a life-cycle perspective) are considered to be economic and are removed from the list of uneconomic customers when the direct net cost of the USO is calculated. The benefit is therefore calculated as the reduction in the estimated net cost of the USO due to the removal of customers and areas that are uneconomic in a single year, but economic from a life-cycle perspective.

The benefit is estimated by using a ‘revenue mark-up’ which is calculated according to the Head of Household (HoH) telecommunications expenditure by age, and population forecasts (by age) in Ireland. This adjusts eir’s revenue in the static models to capture dynamic life cycle effects. The estimated mark-up for 2012/13 was [✂].

eir applies the calculated revenue mark-up to the total revenues in each MDF area in the Area Model, and total revenue in the Customer Model, to calculate net costs.[28] The life-cycle benefit is calculated by taking the difference in the estimated net cost in the Area and Customer Models, with and without the revenue mark-up. Oxera has also confirmed with TERA that there was no overlap or double counting between revenues accounted for in the direct net cost and the intangible benefit estimates.

Variations in revenue over a five-year period are used and annualised into equal amounts for the five years. eir has used a time horizon of five years as it considers that eir’s customer lifetime is the appropriate time period to use when calculating the life-cycle benefits.[29]

[27] ComReg (2011), op. cit., para. 4.22.
[28] These models are used in estimating the direct net cost of the USO. The Area Model estimates the net cost of providing services to uneconomic areas. The Customer Model estimates the net cost of providing services to uneconomic customers in economic areas. The mark-up is applied to total revenues in the Customer Model because individual customers cannot be identified.
[29] eir uses a time horizon of five years to generate a ‘central estimate’. To check how sensitive the estimates are to the time period used, eir considered a range of three to five years and found that the results were not sensitive to the choice of time period.

The calculation of the revenue mark-up relies on a number of other assumptions:

- the cost of serving a household remains constant over time;
- the annual ARPU is determined by the age of the HoH and the associated telecoms expenditure;
- the distribution of telecoms expenditure by age group is the same over time;
- the number of people in each age category changes over time according to population projections from the Central Statistical Office.

3.3 Oxera's assessment

eir's high-level principles for estimating the life-cycle benefits are consistent with the principles followed in the WIK 2009/10 Intangible Benefits Report, however, the application of the principles has been modified to take account of Oxera's previous recommendations. We also note that the methodology for calculating the life cycle benefit, and the intangible benefits model eir used for 2012/13, are the same as those used in its final 2011/12 USO funding application.

During the course of the 2012/13 assessment, eir responded to a number of queries and requests for clarifications from Oxera, as addressed in the Frontier Responses and the Frontier Intangible Benefits Report. The correction of spreadsheet errors, and changes in the source models that feed into the calculation of intangible benefits (e.g. Area and Customer Models), as recommended by TERA, led to a decrease in the estimate of life-cycle benefits from €0.21m in the original 2012/13 application to €0.17m in the Frontier Intangible Benefits Report.

In this application, eir has changed the time horizon representing the lifetime of customers from 25 years to five years, in line with Oxera's previous recommendations. This time period is also consistent with [✂],[30] and with the approach taken in other jurisdictions where the life-cycle benefits of the USO have been estimated (e.g. France and the UK).

In this application, eir has clarified that the assumption that the distribution of telecoms expenditure and demographic changes in uneconomic areas are the same as those for Ireland as a whole is based on its 'view that both economic and uneconomic areas should be considered for the purposes of estimating life-cycle benefits, and thus using the distribution of expenditure and demographic changes for the whole of Ireland is an appropriate proxy'.[31] Oxera is satisfied with the explanation and considers that this approach is reasonable.

We consider that eir's approach to estimating the life-cycle benefits, and the assumptions used as part of the calculation, are reasonable.

3.4 Summary

Overall, Oxera considers that the approach adopted by eir to estimate the life-cycle benefits, and the application of this approach, is in accordance with D04/11, and Oxera's previous recommendations have been taken into account.

[30] [✂]
[31] This response was provided in the Frontier Intangible Benefits Report for 2010/11 (p.81). This response remains relevant for the 2012/13 application as the methodology for calculating the life cycle benefit, and the intangible benefits model eir uses for 2012/13, are the same as those used in its final USO funding applications from 2010/11 to 2012/13.

We consider that the value of €0.17m estimated by eir for the life-cycle benefit for the 2012/13 application is reasonable.

4 Ubiquity benefits

Ubiquity benefits refer to the profit that the USP derives, owing to its USP status, from retaining a proportion of consumers who move from uneconomic to economic areas. Specifically, some customers who migrate are likely to remain as customers of the USP rather than switching to an alternative provider, because they are aware that the USP can provide them with services in all areas and are uninformed about the presence of other providers.

In addition, ubiquity benefits can arise from the ability of the USP to market to business customers that it is able to service their requirements nationally.

Ubiquity benefits may also arise from the economic benefit a USP derives as a result of positive network externalities.

4.1 D04/11

In D04/11, ComReg identified two potential approaches to evaluate ubiquity benefits:

- compare the proportion of customers that move to an economic area and retain the USP relative to the market share of the USP; or
- estimate the number of households who would have chosen an alternative operator, had they been aware of the alternatives.[32]

4.2 eir's approach for the 2012/13 application

eir estimates the ubiquity benefit for the financial year 2012/13 as €11,144.

eir's estimate of the ubiquity benefits is solely based on the benefits arising from migration flows, i.e. an estimate of the increase in profit margins that eir generates from retaining a greater share of customers moving from uneconomic to economic areas, as a result of its USP status, than it would otherwise have retained.

To calculate the ubiquity benefit linked to migration flows, eir first estimates the number of customers who move from uneconomic to economic areas, and who are unaware of alternative providers, but remain with eir. It then multiplies this by the net benefit per line in economic areas (which is calculated as average revenue per line minus average avoidable cost per line). The formula for calculating the ubiquity benefit is set out in Box 4.1.

Box 4.1 Estimation of the ubiquity benefit

$$\text{Ubiquity benefit} = q_m \cdot \beta \cdot \alpha \cdot \left(p_{econ} - c_{econ}\right)$$

Where:

- q_m is the number of fixed residential customers who move from uneconomic to economic areas
- β is eir's market share among migrants from uneconomic to economic areas— eir's market share in economic areas
- α is the % of eir residential subscribers unaware of alternative providers
- p_{econ} is the average revenue per line in economic areas

[32] ComReg (2011), op. cit., para. 4.44.

- c_{econ} is the average avoidable cost per line in economic areas

Source: Frontier Intangible Benefits Report, p. 30.

The ubiquity effect is accounted for by the parameter beta (β). It is assumed that in the absence of the USO, eir’s market share among customers moving from uneconomic to economic areas would equal its market share in economic areas in general. The additional market share as a result of the USO is therefore the difference between the observed market share among the customers who move and the market share in economic areas.

In order to calculate β, eir assumes that its market share of fixed-line subscriptions in uneconomic areas is a reasonable proxy for its market share among subscribers who migrate from uneconomic to economic areas. eir estimates its market share in economic areas using the ratio of (PSTN) retail services to its wholesale services to itself and to third parties (which is used to proxy the total market size). On this basis, it is estimated that eir has a market share of [✂] among customers moving from uneconomic to economic areas and a market share of [✂] in economic areas.

The number of eir customers moving from uneconomic to economic areas is calculated as the percentage of individuals who change address in Ireland (7.33%), based on census data for 2011, multiplied by the number of fixed retail subscriber (PSTN) lines in uneconomic areas in the 2012/13 financial year ([✂]). This is multiplied by β to provide the additional customers that eir retains in economic areas as a result of the USO, and by eir’s profit margin in economic areas $(p_{econ} - c_{econ})$ to provide the additional profit generated from these customers.

In this application, eir has included an additional term that was not included in the WIK 2009/10 Intangible Benefits Report, parameter alpha (α), to reflect that only some of its customers will be unaware of alternative providers when they move. eir considers that ubiquity benefits are:

- generated only for households that move into an area where eir is not the only fixed-line service provider;
- realised only when households are uninformed about the existence of alternative providers in economic areas, or when their decision to stay with eir is affected by their previous relationship with the USP.

eir estimates the proportion of respondents who are not aware of alternative providers using a survey. It asks respondents ‘Have you ever moved from a rural/countryside area to live in a more urban area?’. Those who responded ‘yes’ were then asked ‘Were you aware of any other landline phone service provider when you moved to a new household?’[33] eir suggests that this approach is reasonable as rural areas are those most likely to be uneconomic, while urban areas are likely to be economic.

4.3 Oxera’s assessment

eir’s high-level principles for estimating ubiquity benefits are consistent with the principles followed in the WIK 2009/10 Intangible Benefits Report, but have been modified to take account of Oxera’s previous recommendations, as described below. We also note that the methodology for calculating the ubiquity benefit,

[33] Survey questions Q19 and Q23.

and the intangible benefits model eir used for 2012/13, are the same as those used in its final 2011/12 USO funding application.

During the course of the 2012/13 assessment, eir responded to a number of queries and requests for clarifications from Oxera, as addressed in the Frontier Responses and the Frontier Intangible Benefits Report. This led to a decrease in the ubiquity benefit estimate from €32,805 in eir's original application to €11,144 in the final application. This change reflects a revision to the formula used to calculate β, as well as changes in the source models that feed into the calculation of intangible benefits (e.g. Area and Customer Models), as recommended by TERA.

In this application, eir has included an additional parameter α in the calculation that was not included in the WIK 2009/10 Intangible Benefits Report. As mentioned before, α represents the percentage of eir residential customers who are unaware of alternative providers. This parameter has been added to ensure that only customers who move from uneconomic to economic areas *and* who are unaware of alternative providers are included in the calculation. We consider that the addition of the parameter is reasonable. The absence of the parameter α could lead to an overestimation of the ubiquity benefit, as it assumes that ubiquity is the only reason why customers who move from uneconomic to economic areas choose to stay with eir.

We also note that the way in which β is calculated for this application[34] has been changed since the WIK 2009/10 Intangible Benefits Report, although the meaning of the term remains the same, i.e.:

- if $\beta>0$, then the share of customers moving from uneconomic to economic areas who choose to stay with eir is greater than eir's market share in the economic areas, and the ubiquity effect is positive;
- if $\beta=0$ then there is no ubiquity benefit as the market shares after migration are evenly distributed between eir and its competitors according to the relative market shares before migration;
- if $\beta<0$, then the ubiquity effect is negative.

In assessing the 2009/10 application, Oxera enquired about the appropriateness of assuming that the percentage of eir customers moving from uneconomic to economic areas is the same as the percentage of people changing address in Ireland in general.

eir has retained this assumption in the Frontier Intangible Benefits Report and has provided a further explanation as to why it has done so, stating that its approach is conservative as the percentage of people who change residence in Ireland is likely to overstate the proportion of people moving to economic areas. This is because a proportion of people moving from an uneconomic area may move to other uneconomic areas or to other parts of the same uneconomic area. Therefore, eir states that the estimate will represent an upper bound of the likely number of eir residential subscribers moving from uneconomic to economic areas.[35]

eir also notes that a robust estimate cannot be derived from the survey because it would not be possible to accurately identify whether a given respondent lives

[34] This change was made between the original and final USO funding applications for 2012/13.
[35] Frontier Intangible Benefits Report, p. 32.

in, and moved from, an economic or uneconomic area, and one would need to assume that rural/urban areas are a good proxy for uneconomic/economic areas.[36]

We agree that the assumption used to estimate the proportion of people moving from uneconomic to economic areas is likely to represent an upper bound of the likely number of eir residential customers moving from uneconomic to economic areas and, therefore, the estimated ubiquity benefit (€11,144 in 2012/13 application) would represent an upper bound for this benefit. We consider that eir's approach is suitable for the 2012/13 application as it would not be proportionate for eir to conduct a new survey.

In addition, similar to the enhanced brand recognition benefit, we note that the number of eir customers is based on the number of eir's lines as opposed to the number of accounts. eir clarified, and we agree, that for the purposes of estimating ubiquity benefits the number of lines was used consistently throughout the calculations.[37]

ComReg states that ubiquity benefits may also arise from the economic benefit a USP derives from the overall sector as a result of positive network externalities.[38] eir has not estimated the benefits associated with positive network externalities. Oxera considers that this is reasonable as it is difficult to estimate positive network externalities benefits robustly and also to ensure that there is no double counting between these potential benefits and other types of intangible benefits.

ComReg states that ubiquity benefits may also be derived from the ability to market the USP organisation to business customers as a result of being able to serve their requirements nationally.[39] For this application, eir has confirmed that business subscribers have not been included. It highlights that the number of business customers changing location in a year is small due to the high fixed costs involved, and that the majority of businesses in Ireland are already located in economic areas.[40]

eir has provided us with data on the proportion of business customers who are located in uneconomic areas. This data confirms that the vast majority of business lines, and, by extension, business customers, are located in economic areas. Therefore, Oxera considers that the exclusion of business customers from the ubiquity calculation is unlikely to have a material impact on the size of the benefit for 2012/13.

4.4 Summary

Overall, we consider that the approach used to calculate the ubiquity benefit, and the application of the approach, are reasonable and in accordance with ComReg's methodology. We consider that the value estimated by eir for the

[36] This response was provided in the Frontier Intangible Benefits Report for 2010/11 (pp. 81–82). This response remains relevant for 2012/13 application as the methodology for calculating the ubiquity benefit, and the intangible benefits model eir uses for 2012/13, are the same as those used in its final USO funding applications from 2010/11 to 2012/13.
[37] eir noted that basing the number of eir subscribers on the number of eir's lines is a reasonable approach and eir has also highlighted that the difference in the number of lines and the number of accounts has a very marginal impact on the estimated intangible benefits. We have been unable to test the impact of the assumption on the estimate of ubiquity as the intangibles model is based on data for individual lines.
[38] ComReg (2014), 'Assessment of Eircom's Universal Service Fund Application for 2009-2010– Response to Consultation and Determination', Decision D01/14, 9 January, para. 6.18.
[39] Ibid., para. 6.18.
[40] This response was provided in the Frontier Intangible Benefits Report for 2010/11 (p. 82). This response remains relevant for 2012/13 application as the methodology for calculating the ubiquity benefit, and the intangible benefits model eir uses for 2012/13, are the same as those used in its final USO funding applications from 2010/11 to 2012/13.

ubiquity benefit of €11,144 is reasonable for the purposes of the 2012/13 application.

5 Marketing benefits

Marketing benefits associated with the USO in the context of the 2012/13 application include the benefits that the USP may derive from having access to customer data that is acquired because it is the USP, and from being able to advertise itself on uneconomic public payphones at no cost.

5.1 D04/11

D04/11 states that the marketing benefits incorporate the different types of benefits relating to customer usage data and benefits from advertising, in particular on public payphones.

The potential types of marketing benefits identified by ComReg are:[41]

- commercial advantage owing to access to customer data and the potential benefit of using this information for more targeted promotions, or not, as a result, having to undertake market research;
- potential savings as a result of advertising in economic areas through the use of public payphones and WiFi hotspots.

In relation to the potential benefits from customer data, ComReg considers that there may be significant advantages for the USP in having access to information on customers that it acquires as a result of the USO (e.g. their personal profile and expenditure patterns), which could in turn increase the profitability of both economic and uneconomic customers to the USP.

ComReg is of the view that it is important to consider whether these benefits are due to the fact that the USP is a large, dominant player, or a direct result of its USP status. In addition, caution needs to be taken in estimating this benefit, as there is a potential for double counting with the enhanced brand recognition benefit.

ComReg advised that an approach similar to that used by Ofcom would be appropriate for the estimation of marketing benefit arising from eir's advertising on public payphones. This approach, which is detailed in the following section, involves determining the overall advertising income on uneconomic USO payphones as a proxy for the benefit eir gains from advertising its own brand on such payphones. To do this, it is first necessary to establish the number of uneconomic payphones that have an advertising value.

5.2 eir's approach for the 2012/13 application

eir estimates the marketing benefit it derives from its position as USP to be €19,406.

eir's estimate solely focuses on the benefits generated from advertising on uneconomic public payphones. eir argues that benefits from being able to use customer data from uneconomic customers and from displaying its logo on WiFi hotspot login pages, is either likely to be negligible or cannot be quantified robustly.

eir's approach to calculating the marketing benefit is consistent with the approach taken in the WIK 2009/10 Intangible Benefits Report. In this application, eir estimates the advertising revenues that are generated from third parties' advertising on uneconomic payphones, and uses this as a proxy for the

[41] ComReg (2011), op. cit., paras 4.23–4.25, and ComReg (2014), op. cit., para. 6.22.

cost savings that eir makes from not having to advertise elsewhere in the same area.

eir calculates the advertising benefits from uneconomic public payphones using the following steps.

- To estimate the marketing benefits from uneconomic payphones, the number of payphones that are suitable for advertising need to be identified. This is done by using data from eir’s payphone department, which lists those payphones that are of interest from an advertising perspective. Payphones identified as ‘suitable for advertising,’ which totals [✂], are those located in counties where some payphone advertising revenue had been generated.[42]
- eir splits payphone advertising revenues totalling [✂] equally across payphones identified as ‘suitable for advertising’. National payphone advertising revenues are taken from eir’s regulated accounts. These are then spread proportionally across the payphones suitable for advertising leading to a revenue allocation of [✂] per payphone.
- The number of USO payphones is then identified from the Payphone Model provided by eir’s payphone department. There are 1,328 USO payphones.
- Each of these is then identified as economic or uneconomic using the output of eir’s Payphone Model. There are [✂] uneconomic USO payphones.

The marketing benefit is obtained from summing the advertising revenue over the uneconomic USO payphones that are suitable for advertising.

5.3 Oxera’s assessment

eir’s high-level principles for estimating the marketing benefits are consistent with the principles followed in the WIK 2009/10 Intangible Benefits Report, which Oxera considered was reasonable. We also note that the methodology for calculating marketing benefits and the intangible benefits model eir used for 2012/13 are the same as those used in its final 2011/12 USO funding application.

Following the queries raised by Oxera in assessing the WIK 2009/10 Intangible Benefits Report, eir provided a number of clarifications for the 2012/13 application, as discussed below. The estimate of marketing benefits (€19,406) in the Frontier Intangible Benefits Report also declined slightly from the estimate provided in the initial Frontier Intangible Benefits Report (€20,131) due to changes in the source models recommended by TERA that feed into the calculation of intangible benefits (i.e. the number of uneconomic USO payphones identified in the Payphone Model).

eir noted that ComReg does not provide any guidance on how to quantify potential benefits from customer data.[43] Therefore, eir’s analysis is focused on advertising benefits generated from displaying eir’s logo on its uneconomic payphones.[44] We consider that this approach is reasonable as it would be difficult to separate the benefits associated with having access to data as a result of being the USP and those as a result of just being a large operator. Also, it would be difficult to accurately quantify any potential benefit that eir may get by

[42] This uses payphone advertising revenue by county over a six-month period at the end of 2012/13.
[43] eir also notes that data protection law in Ireland forbids the selling of consumer data, meaning eir is unable to generate any revenues from selling such data.
[44] Frontier Intangible Benefits Report, pp. 39–40.

having access to information on customers that it acquires as a result of being the USP.

In assessing the WIK 2009/10 Intangible Benefits Report, we sought further clarification as to whether savings in advertising costs from using WiFi hotspots were included in the analysis. Frontier's Responses confirmed that they were not. We recommended that this benefit should be quantified and incorporated into the analysis in future. In this application, eir has clarified that savings in advertising costs from using WiFi hotspots are not included in the marketing benefit calculation, for the following reasons.

- eir submits that the intangible benefits derived from displaying eir's logo on its WiFi hotspot login pages cannot be robustly quantified and any advertising benefit that eir receives from having its logo on the WiFi hotspot homepage would be negligible.
- To illustrate this, eir presents a hypothetical scenario where its WiFi hotspot login pages attract 1m unique views.
- eir estimates the total marketing benefits of these views at €540 (based on the average cost per 1,000 impressions of advertising on Google, Facebook and LinkedIn of €0.54).

It is not clear to Oxera how the 1m unique views assumption would correspond to the actual WiFi hotspot usage. Averaging this across the number of uneconomic USO payphones, this would equate to approximately five unique views per day per payphone. However, as eir does not have a record of the number of visitors logging into its WiFi hotspots, we cannot confirm whether this number of views per day is likely to be reasonable.

In assessing the WIK 2009/10 Intangible Benefits Report, Oxera expressed some concerns over the appropriateness of using payphone advertising revenues as a proxy for cost savings. Cost savings are estimated from advertising on uneconomic payphones based on the revenue that eir received from selling advertising space to third parties on its uneconomic payphones. Oxera and ComReg understood that this proxy was used owing to the lack of better data; however, estimates of eir's cost savings should, in principle, be based on how much it would have cost eir to advertise itself elsewhere in the same areas as those uneconomic payphones are located, rather than advertising free of charge on uneconomic payphones.

In this application, eir has noted that it believes that measuring the advertising benefit using eir's payphone advertising revenues is appropriate. This is because the estimated advertising benefit should reflect the value of advertising space identical to that on the uneconomic payphones, and in the areas where payphones are located. The revenue that eir generates from advertising on these payphones reflects the price that third parties are willing to pay for the 'advertising space' on the payphones and therefore is a reasonable approximation of the price (and thus the cost to eir) of purchasing similar forms of advertising in the same (uneconomic) area.[45]

In addition, eir notes that the approach is likely to be conservative, i.e. the estimate is likely to represent an upper bound on the advertising benefit from uneconomic payphones. eir explains that uneconomic payphones tend to be located in less densely populated areas with fewer payphone users, where the value of advertising space (and thus payphone advertising revenue) is likely to

[45] Frontier Intangible Benefits Report, pp. 39–40.

be lower. Therefore, by spreading eir's payphone advertising revenues equally across all payphones the estimate is likely to represent an upper bound on the value of marketing benefit.[46]

We consider that this approach to calculating the advertising benefit from uneconomic payphones is reasonable.

Oxera also made a minor downward adjustment of €725 to eir's estimate of marketing benefits in its final 2012/13 USO funding application. This adjustment was made to reflect the exclusion of [✂] payphones which become economic once advertising revenue is taken into account, following an adjustment TERA made to the direct net cost Payphone Model (see section 8.2.1 of the TERA Report). eir's marketing benefit estimate was accordingly adjusted by Oxera, resulting in a slightly reduced marketing benefit, from €19,406 claimed by eir to €18,681.[47]

5.4 Summary

Overall, we consider that the approach used by eir to estimate the marketing benefit for the 2012/13 application is reasonable, and in accordance with D04/11. The application of this approach is also empirically sound and we consider the adjusted value of €18,681 for the marketing benefit for the 2012/13 application is reasonable.

[46] This response was provided in the Frontier Intangible Benefits Report for 2010/11 (pp. 83–84).This response remains relevant for the 2012/13 application as the methodology for calculating the marketing benefit, and the intangible benefits model eir uses for 2012/13, are the same as those used in its final USO funding applications from 2010/11 to 2012/13

[47] We note that TERA has suggested that ComReg could consider whether an adjustment would be required to the level of avoidable costs within the Payphone Model in 2012/13—in line with Decision 16 of D04/11 and taking account of the Payphones Relocation / Removal policy (ComReg Document 06/14). Our view is that if the number of uneconomic USO payphones included in the Payphone Model for 2012/13 were to be adjusted, the estimate of marketing benefits may be slightly affected.

6 Conclusion

Oxera's review of eir's estimation of the intangible benefits of the USO focused on the following aspects:

- understanding and assessing eir's rationale for adopting the particular methodologies for estimating the value of the four identified benefits;
- assessing changes in the intangible benefits methodology used in eir's 2012/13 USO funding application by reference to the methodology used in eir's final 2009/10 and 2011/12 USO funding applications;
- considering the extent to which Oxera's recommendations from its assessment of the WIK 2009/10 Intangible Benefits Report have been incorporated;
- assessing eir's empirical analysis;
- evaluating the consistency of eir's approaches with D04/11;
- comparing eir's approach and estimates with international approaches.

Overall, we consider that the approaches adopted by eir, and the estimates of the intangible benefits, are reasonable for inclusion in the calculation of the net cost to eir of providing the USO for the financial year 2012/13. The approaches are also consistent with D04/11. We accept as being reasonable the values as set out in the table below for intangible benefits for the purposes of the 2012/13 application.

Table 6.1 Estimates of the intangible benefits for 2012/13

Intangible benefit	Initial eir application (€)	Final eir application (€)	Final Oxera assessment (€)
Enhanced brand recognition	1,536,276	1,002,351	1,002,351
Life-cycle	210,824	167,257	167,257
Ubiquity	32,805	11,144	11,144
Marketing	20,131	19,406	18,681
Total	**1,800,036**	**1,200,158**	**1,199,433**

Note: individual estimates for intangible benefits are rounded.

Source: Oxera analysis and Frontier Intangible Benefits Report.

A1 International approaches

In this section Oxera considers how the approaches used by eir for each of the four types of intangible benefit, and the resulting estimates, compare with the practices in other countries. These comparisons provide context for eir’s approach of estimating the value of the intangible benefits and serve as a high-level sense check of eir’s estimates.

A1.1 Enhanced brand recognition

Numerous approaches have been used to estimate the enhanced brand benefit across different jurisdictions. Many of the approaches described below—for example the surveys undertaken in France, Italy and Spain—are consistent with ComReg’s suggested methods for estimating the value of enhanced brand recognition and the approach used by eir (discussed in section 2.1).

In France, France Telecom subscribers were surveyed about their knowledge of the company’s USO, its corporate reputation, and whether they were willing to pay an ‘over-price’ to remain as its customers. A statistical method was then used to allocate the ‘over-profit’ enjoyed by France Telecom to different potential drivers, such as USO-related corporate reputation, non-USO-related corporate reputation, and customer inertia. The results of the analysis suggested that customers had poor knowledge of the USO services provided by France Telecom, and any over-profit enjoyed by France Telecom is primarily caused by customer inertia. As a result, ARCEP, the communications regulator, concluded that the brand recognition benefits were zero.[48]

In Italy, the benefit of brand loyalty for Telecom Italia was estimated as the product of the number of loyal customers in profitable areas and the average revenue of each of these customers. A survey was conducted to determine the number of ‘loyal’ customers—i.e. those who use Telecom Italia because it is the USP. It was noted that while a survey might be more objective than other methods, individuals’ responses might not reflect the choices they would actually make if faced with the same choice in reality. As a result, additional analysis was conducted with a focus group to provide a qualitative assessment of customers’ familiarity with the concept of a USO.[49]

In Spain, CNMC, the competition and markets body responsible for the communications sector, appraised the value of the brand of Telefónica Group through the revenue generated from ‘loyal’ customers. CNMC estimated the proportion of ‘loyal’ customers that decided to use Telefónica due to its USO status based on a survey. This proportion of ‘loyal’ customers was then multiplied by the number of lines that are exclusively served by Telefónica Group by virtue of being the USO provider and the average total margin per line to estimate the USO-related brand value.[50]

In Portugal, ANACOM, the communications regulator, estimated the benefits of corporate reputation and brand enhancement using an independent valuation of the total brand value of Portugal Telecom published by the European Brand Institute. The total value of the brand was attributed to the USO provision using

[48] ARCEP (2015), ‘Décision n° 2015-1317’, November, p. 33.
[49] Europe Economics (2006), ‘Verifica del costo netto del Servizio Universale per l’anno 2003’, Relazione Finale, 8 March.
[50] CNMC (2016), ‘Resolución por la que se aprueba el coste neto del servicio universal presentado por Telefónica de España, S.A.U. Por El Ejercicio 2013’, February, pp. 14–15.

the share of the USO business in the total business of the company and the proportion of uneconomic lines.[51]

In the UK, the communications regulator, Oftel (and its successor, Ofcom), adopted a simplified approach whereby the value of brand enhancement was assumed to be 20% of BT's retail expenditure on marketing and advertising.[52]

We note that the methodologies used for estimating the value of enhanced brand recognition in a number of other countries (e.g. France, Italy and Spain) are similar to the approach adopted by eir.

Table A1.1 sets out the estimates for enhanced brand recognition across the different jurisdictions and illustrates the wide range of values estimated. The benefits are expressed in monetary terms, and as a proportion of total intangible benefits. We also calculate the benefit per inhabitant to aid comparability across jurisdictions. This indicates that eir's estimate is in line with the benefits estimated elsewhere as a percentage of total intangible benefits, and the second highest when expressed as the benefit per inhabitant.

Table A1.1 International estimates of the value of enhanced brand recognition

USP	Regulator	Country	Year	Value (m)	As a % of total intangible benefits	Benefit per inhabitant
France Telecom	ARCEP	France	2014	€0.00	0%	€0.00
Portugal Telecom	ANACOM	Portugal	2013	€0.30	27%	€0.03
BT	Oftel/Ofcom	UK	2003/04	£50–£52	81–85%	£0.84–£0.87
Telecom Italia	AGCOM	Italy	2006	€10.80	58%	€0.19
Telefónica	CNMC	Spain	2013	€8.52	97%	€0.18
eir	**ComReg**	**Ireland**	**2012/13**	**€1.00**	**84%**	**€0.22**

Note: Benefit per inhabitant is based on population data for the year of the application for each country.

Source: ARCEP (2016), 'Décision n° 2016-0579', April, CNMC (2016), ANACOM (2015), AGCOM (2013), 'Delibera N. 46/13/CIR Servizio Universale: valutazione del costo netto per l'anno 2006', July, Ofcom (2006) and eir's estimates of intangible benefits. Population data from Eurostat.

A1.2 Ubiquity

Some regulators have concluded that ubiquity benefits are insignificant or a consequence of factors other than the USO. For example, in calculations of the net cost of the USO, regulators in France (ARCEP) and Italy (AGCOM) determined that ubiquity benefits were insignificant and excluded them from their assessments.[53] In the UK, while Oftel/Ofcom did quantify this benefit, they

[51] ANACOM (2015), 'Sentido Provável de Decisão sobre os resultados das auditorias aos custos líquidos do serviço universal (CLSU) da MEO – Serviços de Comunicações e Multimédia, S.A. (MEO) relativos ao exercício de 2013', October.
[52] Oftel (1999), 'Universal Telecommunications Services—A consultative document issued by the Director General of Telecommunications', July; Ofcom (2005), 'Review of the Universal Service Obligations', 30 June.
[53] ARCEP (2015), op. cit., p. 31; Europe Economics (2006), op. cit.

determined that the benefit was small based on an assessment that only 1% of the population live in uneconomic areas.[54]

In Spain, CNMC multiplied the number of customers who move from uneconomic to economic areas and stay with Telefónica by the average margin for each line in order to derive an estimate of the ubiquity benefit.[55]

In Portugal, ubiquity benefits were estimated by deriving the number of customers who generate ubiquity benefits for the company. The number of these customers was based on the number of unprofitable customers who move from uneconomic to economic areas multiplied by the proportion of those customers who choose to subscribe to the USP's services. ANACOM then multiplied the number of ubiquity benefit customers by the average margin per line (defined as the net present value of margins earned from customers in economic areas over a period of five years) to derive the overall benefit.[56]

We note that the methodologies for estimating the value of ubiquity benefits used in some of the comparator countries (e.g. Spain and Portugal) are similar to the approach adopted by eir.

Table A1.2 sets out the estimates for ubiquity benefits across the different jurisdictions. eir's estimate is in line with the benefits estimated elsewhere, which are all estimated to be zero or very small.

Table A1.2 International estimates of ubiquity benefits

USP	Regulator	Country	Year	Value (m)	As a % of total intangible benefits	Benefit per inhabitant
France Telecom	ARCEP	France	2014	€0.00	0%	€0.00
Portugal Telecom	ANACOM	Portugal	2013	€0.00	0%	€0.00
BT	Oftel/Ofcom	UK	2003/04	Insignificant	0%	£0.00
Telecom Italia	AGCOM	Italy	2006	€0.00	0%	€0.00
Telefónica	CNMC	Spain	2013	€0.04	0%	€0.00
eir	**ComReg**	**Ireland**	**2012/13**	**€0.01**	**1%**	**€0.00**

Note: Benefit per inhabitant is based on population data for the year of the application for each country.

Source: ARCEP (2016), CNMC (2016), ANACOM (2015), AGCOM (2013), Ofcom (2006) and eir's estimates of intangible benefits. Population data from Eurostat.

A1.3 Life-cycle benefits

Similar to ComReg's methodology in D04/11, in the other jurisdictions reviewed, regulators consider whether uneconomic customers are likely to become profitable over their lifetimes, and exclude them from the net cost calculation of the USO accordingly.

[54] Ofcom (2005), 'Review of the universal service obligation', Consultation document, January; Ofcom (2006), 'Review of the universal service obligation', statement, March; Oftel (1997), 'Universal Telecommunications Services', consultative document; ComReg (2010), 'Costing of universal service obligations: principles and methodologies', Consultation 10/94, 30 November.
[55] CNMC (2016), op. cit., p. 15.
[56] ANACOM (2015), op. cit.

In France, ARCEP identified two types of benefits associated with life-cycle effects—individual effect and macroeconomic effect. The individual effect is based on the variation of household composition over time as well as the benefit from customers who stop receiving social tariffs but decide to stay with the USP. The macroeconomic effect looks at the costs and revenues of customers over a five-year period to determine whether they became profitable.[57]

In Italy, for the applications in years prior to 2013, AGCOM determined that the life-cycle benefits did not generate any additional intangible benefits for Telecom Italia.[58] However, in 2014, AGCOM estimated a life-cycle benefit of €30,000. A detailed methodology for that estimate was not provided.[59]

In Spain, CNMC quantified the benefit as the additional margin that could be earned on uneconomic lines that could potentially become profitable. The benefit depends on two variables:

- the number of lines that move from uneconomic to economic areas due to broadband take-up on pre-existing telephone lines;
- the profitability differential between uneconomic and economic lines.

The regulator only considered the lines in unprofitable areas.[60]

In Portugal, ANACOM adopted a similar approach to CNMC and estimated the life-cycle benefits as the value generated from uneconomic customers who could become profitable over a period of five years (estimated based on historical data). The estimated number of customers who may become profitable is multiplied by the net present value of margins earned from customers in economic areas over a period of five years.[61] In 2015, ANACOM did not estimate a life-cycle benefit—no justification was provided in the final report.[62]

In the UK, Oftel/Ofcom considered the life-cycle benefits as the increased likelihood of retaining profitable customers if the USP served those customers when they were unprofitable. It estimated the benefit in four stages:[63]

- determine the proportion of loss-making customers and their net costs;
- determine the proportion of those customers likely to become profitable over a period of five years;
- estimate the net present value of such customers (including the implications of the change in the structure of telecoms prices);
- estimate the proportion of such customers that the USP would keep without the USO.

We note that the methodologies for estimating the value of life-cycle benefits used in the comparator countries are similar to the approach adopted by eir.

Table A1.3 sets out the estimates for life-cycle benefits across the different jurisdictions. eir's estimate is slightly higher than the benefits estimated in other

[57] ARCEP (2015), op. cit., p. 31.
[58] Europe Economics (2006), op. cit.
[59] AGCOM (2014), 'Servizio universale in materia di servizi di comunicazione elettronica: valutazione del costo netto per l'anno 2007', October.
[60] CNMC (2016), op. cit., p. 16.
[61] ANACOM (2011), 'Metodologia a aplicar no cálculo dos custos líquidos do serviço universal de comunicações electrónicas', February.
[62] ANACOM (2015), op. cit.
[63] BEREC (2010), 'BEREC Report on Universal Service – reflections for the future', June.

jurisdictions when expressed as a total value and benefit per inhabitant. Only in France, life-cycle benefits account for a higher proportion of total intangible benefits than in Ireland.

Table A1.3 International estimates of the life-cycle benefits

USP	Regulator	Country	Year	Value (m)	As a % of total intangible benefits	Benefit per inhabitant
France Telecom	ARCEP	France	2014	€0.04	75%	€0.00
Portugal Telecom	ANACOM	Portugal	2013	€0.00	0%	€0.00
BT	Oftel/Ofcom	UK	2003/04	£0–£1	0–2%	£0.00–£0.02
Telecom Italia	AGCOM	Italy	2006	€0.00	0%	€0.00
Telefónica	CNMC	Spain	2013	€0.02	0%	€0.00
eir	**ComReg**	**Ireland**	**2012/13**	**€0.17**	**14%**	**€0.04**

Note: Benefit per inhabitant is based on population data for the year of the application for each country.

Source: ARCEP (2016), CNMC (2016), ANACOM (2015), AGCOM (2013), Ofcom (2006) and eir’s estimates of intangible benefits. Population data from Eurostat.

A1.4 Marketing

In France, the benefits of access to customer databases were considered as part of estimating the marketing benefits. This was based on the benefit from selling non-valuable subscriber data to direct marketing companies, and the benefit that France Telecom derives from selling its other products to these customers (cross-selling). ARCEP concluded that the benefit associated with customer databases is zero due to the falling numbers of lines and subscribers.[64]

In Italy, AGCOM, the communications regulator, determined marketing benefits for Telecom Italia based on savings in advertising costs and logo display in uneconomic areas due to the presence of USO payphones. The monthly advertising benefits for public payphones were estimated according to the amount charged by Telecom Italia for outside companies to purchase advertising space on the same public payphones, as well as market research on advertising space. AGCOM also considered the benefits of being able to advertise on customers’ bills. The benefit is calculated as the cost Telecom Italia would have to incur to send advertising leaflets to customers living in potentially unprofitable areas.[65]

In the UK, Oftel/Ofcom considered that the benefits of payphone advertising for the USP arose from two potential elements:

- corporate branding/logos on payphones (if not captured in any broader brand benefit estimate);
- the value of the income stream from advertisements on payphones.

[64] ARCEP (2015), op. cit., p. 32.
[65] Europe Economics (2006), op. cit.

Ofcom ultimately calculated the marketing benefits by estimating the proportion of public payphones in uneconomic areas and the economic benefit generated per month—similar to the approach adopted in Italy. Ofcom acknowledged the benefit of gaining information on how customers use phone services, although it did not quantify these benefits.[66]

In Spain, CNMC also estimated the commercial benefits from marketing based on displaying Telefónica's logo on payphones. The marketing benefit is calculated as the product of the average income from a payphone per square meter per year and the area of Telefónica logo. The total revenue generated from payphones is adjusted to reflect the revenue contribution of Telefónica to the wider Telefónica Group in Spain.[67]

In Portugal, ANACOM identified three types of marketing benefits: access to client information (e.g. demand profile of the customers); advertising on uneconomic payphones; and advertising on customers' bills. The regulator concluded that the value of the client information is likely to be negligible. Therefore, it quantified only the benefits related to the advertising on payphones and bills.[68]

The relevant advertising space on uneconomic payphones was defined as the product of the available advertising space on payphones (including the USP's logo) and the proportion of uneconomic payphones. The available advertising space on uneconomic payphones was then multiplied by the value of the advertising space to estimate the marketing benefits associated with uneconomic payphones.

In order to identify the marketing benefits associated with customers' bills, ANACOM estimated the total annual cost of sending the bills to uneconomic customers. The total cost was multiplied by the proportion of bills that also included any additional promotional material, such as brochures on additional services provided by the USP. This estimate was used as a proxy for the marketing benefits.[69]

We note that the methodologies for estimating the value of marketing benefits used in some of the comparator countries (e.g. Italy, UK, Spain and Portugal) are similar to the approach adopted by eir.

Table A1.4 below sets out the estimates for marketing benefits across the different jurisdictions and illustrates the wide range of values (expressed in monetary terms, as a proportion of total intangible benefits and as benefit per inhabitant) estimated for this benefit. eir's estimate is lower than the benefits estimated in most other jurisdictions, and is similar in value, and as a benefit per inhabitant, to those in France and Spain.

[66] BEREC (2010), op. cit.
[67] CNMC (2016), op. cit., pp. 16–17.
[68] ANACOM (2015), op. cit.
[69] Ibid.

Table A1.4 International estimates of marketing benefits

USP	Regulator	Country	Year	Value (m)	As a % of total intangible benefits	Benefit per inhabitant
France Telecom	ARCEP	France	2014	€0.01	25%	€0.00
Portugal Telecom	ANACOM	Portugal	2013	€0.78	70%	€0.07
BT	Oftel/Ofcom	UK	2003/04	£9–£11	15–18%	£0.15–£0.18
Telecom Italia	AGCOM	Italy	2006	€7.70	42%	€0.13
Telefónica	CNMC	Spain	2013	€0.20	2%	€0.00
eir	**ComReg**	**Ireland**	**2012/13**	**€0.02**	**2%**	**€0.00**

Note: Benefit per inhabitant is based on population data for the year of the application for each country.

Source: ARCEP (2016), CNMC (2016), ANACOM (2015), AGCOM (2013), Ofcom (2006) and eir’s estimates of intangible benefits. Population data from Eurostat.

A1.5 Total intangible benefits

Table A1.5 provides the estimates for the total intangible benefits across jurisdictions. It also sets out total intangible benefits as a proportion of GDP and per inhabitant. This indicates that eir’s estimates are in line with international approaches when considered as a proportion of GDP and are among the highest when expressed as benefit per inhabitant.

Table A1.5 International estimates of total intangible benefits

USP	Regulator	Country	Year	Value (€m)	Intangible benefits as % of GDP	Benefit per inhabitant
France Telecom	ARCEP	France	2014	0.05	0.0002%	€0.00
Portugal Telecom[1]	ANACOM	Portugal	2013	1.12	0.0007%	€0.11
Telecom Italia	AGCOM	Italy	2006	18.5	0.0012%	€0.32
Telefónica	CNMC	Spain	2013	8.77	0.0009%	€0.19
eir	**ComReg**	**Ireland**	**2012/13**	**1.20**	**0.0007%**	**€0.26**

Note: Benefit per inhabitant is based on population data for the year of the application for each country. [1] The estimate includes €34,298 benefit associated with the tax treatments of revenues generated from pensioners. This benefit is specific to the regulatory regime in Portugal and is therefore not described in detail in this section.

Source: ARCEP (2016), CNMC (2016), ANACOM (2015), AGCOM (2013), Ofcom (2006) and eir’s estimates of intangible benefits. GDP and population data from Eurostat.

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