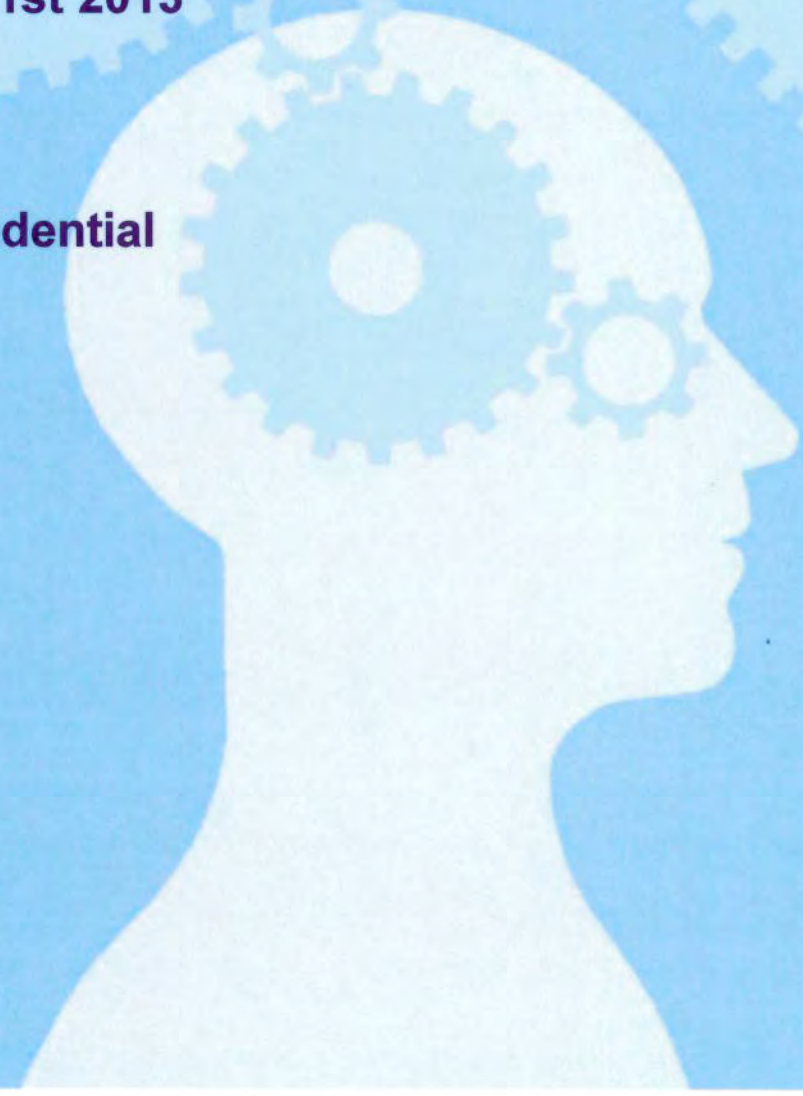
Oxera

# Assessment of WIK's calculation of intangible benefits

## Prepared for Commission for Communications Regulation

February 1st 2013

Non-confidential



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# 1 Introduction

The principles and methodologies for assessing whether the universal service obligation (USO) represents a net cost that places an unfair burden on the universal service provider (USP) were established in the Commission for Communications Regulation's (ComReg) Decision D04/11 (henceforth referred to as 'the Decision').[1]

The Decision establishes that USO net costs will be calculated on the basis of 'the portion of costs, both capital and operational expenditure for the given financial year, that can be directly attributed to the USO service...and which could have been avoided without the USO.'[2] Furthermore, it establishes that the USO could create tangible benefits (ie, revenues) and intangible (ie, indirect) benefits for the USP.

Therefore, the calculation of the net cost of the USO must take account of the intangible benefits that arise 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. ComReg identifies four categories of intangible benefits which, at a minimum, should be taken into account: brand recognition, ubiquity, life-cycle and marketing benefits.[3]

In identifying these benefits, ComReg has established a number of principles: the benefits represent effects on the USP of providing the USO which have not been accounted for in the direct costing methodology; the need to avoid double-counting any benefits; and the benefits are those accruing to the USP only as a consequence of it being the designated USP.

In order to fulfil Decisions 31, 35 and 36, eircom engaged WIK-Consult (hereafter referred to as WIK) to prepare an estimate and report on the intangible benefits that accrue to eircom as the USP. Against this background, ComReg has commissioned Oxera to review WIK's estimation of the intangible benefits that eircom receives as a result of the USO.[4] Oxera's review includes developing an understanding of the approaches considered by WIK and the rationale for adopting the particular methodologies in the estimation of the four categories of intangible benefit. Oxera has also compared WIK's methodologies with international precedent and evaluated whether they have been implemented robustly in the empirical analysis. The assessment of WIK's theoretical approach to, and empirical estimation of, each benefit is also used as the basis on which to provide recommendations for potential improvements going forward.

In undertaking this assessment, Oxera considered the estimates prepared by WIK in its report, 'Intangible Benefits of Universal Service Provision in Ireland', which is included in eircom's May 2012 submission. Given the complexity of the issues considered in this submission, there were a number of information exchanges between Oxera, WIK and eircom to seek clarifications on specific issues. These exchanges have also informed the recommendations presented in this report to further improve the assessment process in future applications. Oxera's analysis of each intangible benefit, and recommendations for future applications, is based on the most up-to-date information provided by WIK.

The remainder of this report is structured as follows:

- sections 2 to 5 review in detail the four categories of intangible benefit considered in WIK's report: enhanced brand recognition, ubiquity, life cycle, and marketing;

[1] Commission for Communications Regulation (2011), 'Decision on the Costing of universal service obligations: Principles and Methodologies', Decision D04/11, May 31st.
[2] Ibid, p. 78.
[3] Ibid.
[4] WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland', report prepared for eircom for the 2009/10 financial year, final report, May 31st.

- section 6 considers whether WIK's estimates of intangible benefits are comparable with estimates from other countries;
- section 7 concludes.

# 2 Enhanced brand recognition

The benefits of enhanced brand recognition refer to the benefit 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.

As the designated USP in Ireland, eircom is required to provide:

- access to phone lines at fixed locations;
- a comprehensive phone directory of subscribers or a telephone directory enquiry service;
- the national directory database;
- public payphones;
- services to disabled users;
- affordable services for vulnerable user groups;
- methods to help consumers monitor and control their expenditure.[5]

ComReg's position is that the benefit of enhanced brand recognition is associated with brand loyalty of customers which allows the USP to gain and retain more customers than it could have without the USO.[6] Potential new customers may be more likely to choose the USP than its competitors owing to eircom's corporate reputation. Similarly, existing customers may be willing to pay a premium for being served by the USP and/or remain with the USP instead of switching to an alternative provider owing to its associated positive brand image.

## 2.1 International precedents

As noted by ComReg and WIK, a wide range of approaches—including surveys, statistical techniques and estimation of advertising/marketing expenditure—have been used in other countries to determine the value of enhanced brand recognition.[7]

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 customer. 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.[8]

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 those users. A survey was conducted to determine the number of 'loyal' customers—ie, those who use Telecom Italia because it is the USP. It was noted that while a survey may be more objective than other methods, individuals' responses might not reflect the choices they would actually make if faced with the same the 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.[9]

Rather than using a survey approach to estimate the enhanced brand value associated with the USP in Spain, CMT, the Spanish telecommunications authority, appraised the value of

[5] Commission for Communications Regulation (2010), 'The Provision of Telephony Services under Universal Service Obligations', Decision Notice, 10/46, June 30th.
[6] Commission for Communications Regulation (2011), op. cit., para 4.14.
[7] Commission for Communications Regulation (2010), 'Costing of universal service obligations: principles and methodologies', Consultation 10/94, November 30th.
[8] BEREC (2010), 'BEREC Report on Universal Service – reflections for the future', June.
[9] Europe Economics (2006), 'Verifica del costo netto del Servizio Universale per l'anno 2003', Relazione Finale, March 8th.

the image of Telefónica Group through annual reports and trademark registrations. It then identified the ratio of the income from services included in the USO to those of the Telefónica Group. Finally, it multiplied the ratio with the value of the image of Telefónica Group to arrive at an estimate of the USO-related brand value.[10]

In the UK, the communications regulator (Oftel and its successor Ofcom) has adopted a simplified approach whereby the value of brand enhancement has been assumed to be 20% of BT's retail expenditure on marketing and advertising.[11]

## 2.2 Estimating the enhanced brand recognition effect

### 2.2.1 ComReg's guidance

ComReg suggests five possible methods for estimating the value of enhanced brand recognition:[12]

- use valuation multiples implicit in a 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;
- 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 surveys and valuation approaches, it may be beneficial to use both to ensure a robust estimate.[13]

### 2.2.2 WIK's approach

WIK considers that there are two alternative approaches to determine the value of enhanced brand recognition. The first is cost-based and involves estimating the amount of money that a company would need to spend on advertising/marketing in order to gain a reputation and brand image comparable to that of the USP owing to its USP status. The second is to estimate the USO-induced brand benefit as the commercial gain enjoyed by the USP from having more loyal customers owing to its USP status. WIK relies on the second approach to estimate the benefit of enhanced brand value for eircom.[14]

#### WIK's theoretical model

WIK's estimation is undertaken as follows:

Step 1 set out a theoretical framework on how the USO-related premium that certain loyal subscribers are willing to pay to eircom translates into profit gains for eircom;

Step 2 carry out empirical analysis that incorporates the estimates of the USO-related premium derived from a customer survey, to estimate the profit gain enjoyed by eircom.

In terms of the theoretical framework, WIK applies:

> a microeconomic approach to evaluate the incremental profit that eircom could realise if they employ a profit maximizing pricing strategy to capitalise on the fact that some of

[10] BEREC (2010), op. cit.
[11] Oftel (1999), 'Universal Telecommunications Services—A consultative document issued by the Director General of Telecommunications', July; Ofcom (2005), 'Review of the Universal Service Obligations', June 30th.
[12] Commission for Communications Regulation (2011), op. cit., p. 57.
[13] Ibid., para 4.40.
[14] WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th.

their subscribers are willing to pay a higher price as percentage of their bill for the privilege of being served by the USP.[15]

Specifically, WIK sets up a model to analyse the difference between: a) eircom's actual profit where some subscribers are willing to pay a USO-related premium; and b) eircom's profit in a counterfactual scenario where it is no longer the USP and therefore receives no USO-related premium from its subscribers. eircom's profit in the actual scenario can be estimated directly based on the actual number of subscribers, revenues that eircom receives from the subscribers, and eircom's costs of serving them. However, in order to predict eircom's profit in the counterfactual scenario, certain assumptions need to be made about the behaviour of the subscribers and eircom in the counterfactual. WIK makes the following assumptions:

- there are two groups of subscribers: Group 1 subscribers are willing to pay a USO-related premium while Group 2 subscribers are not;
- both groups of subscribers have linear demand functions with the same slopes and different intercepts. In moving from the actual to the counterfactual scenario, the demand function of Group 1 subscribers shifts down by the USO-related premium;
- eircom acts as a monopoly in determining the prices to maximise its profit in both scenarios;
- eircom's marginal cost of providing a fixed-line service is constant.

Under these assumptions, WIK estimates the profit gain of a USP with Group 1 subscribers willing to pay a USO-related premium as follows:[16]

$$\text{USO brand-induced profit gain} = \frac{1}{2}\lambda(NS_1+NS_2)ARPU - \frac{1}{8}\lambda^2 b(ARPU)^2$$

$$= \frac{1}{2}\lambda qp - \frac{1}{16}\lambda^2 qp^2/(p-c) \qquad \text{Equation 1}$$ [17]

where:

- λ USO-related premium that Group 1 subscribers are willing to pay for being served by the USP;
- p prices of eircom's fixed-line service, which is measured by annual average revenue per user (ARPU) in financial year 2009/10;
- q total number of residential fixed-line subscribers in economic areas, which equals the sum of the numbers of subscribers in Group 1 ($NS_1$) and Group 2 ($NS_2$) in financial year 2009/10;
- c marginal cost of fixed phone lines, measured in terms of avoidable cost;
- b: coefficient of the linear demand functions of the two groups of subscribers.

WIK notes that, by making assumptions about the demand function of each of the two groups, the profit gain can be calculated using the observed prices charged by eircom (p), the total number of residential fixed-line subscribers in economic areas (q), and the marginal cost of fixed phone lines (c), as well as an estimate of the USO-related premium (λ).[18] Since the USO-related premium that Group 1 subscribers are willing to pay for being served by the USP (λ) is unknown, it needs to be estimated in order to use this equation to evaluate the value of enhanced brand recognition. WIK explains that the model is set up such that λ determines the optimal price, which in turn determines $NS_1$ and $NS_2$ and the total q.[19]

[15] WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th, pp. 10–11.
[16] Ibid., p. 11.
[17] This second equation was not presented in WIK's report, but is a simplified version of WIK's original equation presented above.
[18] WIK-Consult (2012), 'Response to ComReg on certain issues pertaining to intangible benefits of USO', Issue 1, October 17th.
[19] Ibid.

**WIK's estimation of the USO-related premium (λ)**

WIK estimates the USO-related premium using the results of a survey conducted by the independent research company, Amárach Research (hereafter referred to as Amárach).

Specifically, WIK combines the responses to survey questions 6B and 11 to estimate the USO-related premium.[20] Question 6B contains six sub-questions which ask whether different features of eircom's USO make respondents feel more positive or more negative about eircom. Question 11 asks at what point respondents would switch to a new provider (measured according to the percentage increase in their phone bills) ('trigger price increase').

WIK calculates the average trigger price increase for respondents who gave positive answers to all six sub-questions and for respondents who gave negative answers to all six sub-questions in Question 6B. WIK assumes that the difference in the average trigger price increase between them is the USO-related premium (λ).

In carrying out the empirical analysis, WIK differentiates two customer segments depending on whether customers receive a telephone allowance from the Department of Social Protection (DSP): recipients of social welfare/phone services (DSP subscribers) and non-recipients of social welfare/pension phone service (non-DSP subscribers). WIK considers that these two customer segments are faced with different economic drivers and may have different willingness to pay for being served by the USP.

For example, DSP subscribers pay lower telephone bills owing to the payments made on their behalf by the DSP. Therefore, their answers to Question 11 of the survey, which asks about the trigger price increase in terms of subscribers' phone bills, need to be adjusted to reflect the trigger price increase in terms of eircom's revenue, which is how the USO-related premium is defined.

Finally, WIK estimates the USO-related premium for the two customer segments based on answers to survey questions 6B and 11 as shown in Table 2.1.[21]

**Table 2.1 WIK's estimates of USO-related premium**

| | Positive feelings about eircom | | Negative feelings about eircom | | | |
|---|---|---|---|---|---|---|
| | No. of respondents | Average trigger price increase | No. of respondents | Average Trigger price increase | Difference in average trigger price increase | USO-related premium (λ) |
| | (a) | (b) | (c) | (d) | (e) = (b) – (d) | (f) |
| Non-DSP subscribers | 340 | ✂ | 22 | ✂ | ✂ | ✂ |
| DSP subscribers | 101 | ✂ | 3 | ✂ | ✂ | ✂ |

Note: [1] The estimate of the USO-related premium for DSP subscribers is different from the difference in the average trigger price increases because DSP subscribers receive an allowance towards their phone bills.
Source: WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th; and WIK (2012), 'Response to ComReg on Certain Issues Pertaining to Intangible Benefits of USO', Issues 2 and 3, October 26th; spreadsheets provided to Oxera.

[20] Question 6B asks about the impact of eircom's USO on how an individual feels about eircom, 'using a scale of 1 to 5, where 1 makes you feel much more negative about eircom, 3 doesn't make you feel any differently and 5 makes you feel must more positive'. The question is asked in relation to six aspects: installing landline phones anywhere in the country; providing and printing all national landline telephone directories; providing a national landline directory enquiry service; maintaining the National Directory Database; providing public payphones throughout Ireland; and ensuring that disabled users are accommodated when it comes to phone service and usage. Question 11a asks: 'If eircom was to increase their prices to cover the costs associated with their universal service obligation, at what percentage increase, if any, would you be forced to switch to a new provider?'

[21] WIK has provided a spreadsheet with the survey data used to estimate the USO-related premium, as requested by Oxera. However, the spreadsheet provides the hard-coded survey data and does not link it to the estimate of the USO-related premium. Oxera has not been able to replicate the USO-related premium by applying WIK's stated methodology to the survey data.

**WIK's estimation of the numbers of subscribers in the two groups (NS1 and NS2)**
WIK determines the number of subscribers in Group 1 (who are willing to pay a USO-related premium) and Group 2 (those are not willing to pay such a premium) based on survey Question 9. This question asks whether the fact that eircom is the USP in Ireland makes the respondents more or less likely to stay with eircom. WIK assumes that those who said that they were more likely to stay with eircom belong to Group 1 subscribers, and those who said they were less likely to stay with eircom belong to Group 2. WIK then uses these numbers to populate its theoretical model.

WIK's estimation of the numbers of subscribers in Group 1 and Group 2 is shown in Table 2.2.

**Table 2.2 WIK's estimates of the numbers of subscribers in Groups 1 and 2**

| | Total no. of subscribers (q) | No. of Group 1 subscribers ($NS_1$) | No. of Group 2 subscribers ($NS_2$) |
|---|---|---|---|
| Non-DSP subscribers | ✂ | ✂ | ✂ |
| DSP subscribers | ✂ | ✂ | ✂ |

Note: The number of Group 1 (2) subscribers equals the number of respondents who, in response to Question 9 of the survey, said that they were more (less) likely to stay with eircom. These estimates are based on percentages calculated from the survey responses of 750 individuals. WIK's final report states that there are ✂ DSP subscribers in Group 1, although the spreadsheet provided contains ✂ DSP subscribers.
Source: WIK-Consult(2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th; spreadsheet provided to Oxera on October 30th.

**WIK's estimation of the benefit of enhanced brand recognition**
Table 2.3 combines WIK's estimates of prices (p), number of subscribers (q), marginal costs (c) and USO-related premium (λ) to arrive at estimates of the benefit of enhanced brand recognition. As discussed above, this benefit is estimated separately for DSP and non-DSP subscribers.

**Table 2.3 WIK's estimates of benefit to eircom due to enhanced brand value**

| Input variable | Non-DSP subscribers | DSP subscribers |
|---|---|---|
| USO-related premium (λ) | ✂ | ✂ |
| Total number of subscribers (q) | ✂ | ✂ |
| Price or ARPU (p) | ✂ | ✂ |
| Marginal cost (avoidable costs, c) | ✂ | ✂ |
| Benefit of enhanced brand value | ✂ | ✂ |

Note: Price and marginal cost are on an annual basis.
Source: WIK-Consult(2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th.

Based on these estimates, WIK reports that the total benefit due to the enhanced brand recognition is €1,843,698.[22]

## 2.3 Assessment

### 2.3.1 Theoretical framework

The general conceptual approach adopted by WIK to estimate the USO-induced brand benefit as the commercial gain enjoyed by eircom due to its USP status is reasonable. In

[22] WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th; and spreadsheet provided to Oxera on October 30th 2012.

particular, WIK's approach in estimating this benefit as the difference between eircom's actual profit (where eircom is the USP and some subscribers are assumed to be willing to pay a USO-related premium) and eircom's profit in the counterfactual scenario (where eircom is no longer the USP and does not receive any USO-related premium) is sound.

However, the specific theoretical model developed by WIK to estimate eircom's profit in the counterfactual scenario and the USO-induced brand benefit has counterintuitive predictions, which raises questions about the validity of WIK's assumptions and the applicability of the model.

Specifically, WIK's model implies that the benefit from enhanced brand recognition is independent of the number of subscribers who care about the USO—ie, the number of Group 1 subscribers. Equation (1) shows that the benefit of the enhanced brand recognition depends on eircom's total number of subscribers (q), and that the more subscribers there are in total, the greater the benefit. However, given the total number of subscribers, the allocation between the two groups that differ in their willingness to pay a USO-related premium ($NS_1$ and $NS_2$) does not directly affect the benefit of enhanced brand recognition.[23]

This prediction of the model is both counterintuitive and contrary to WIK's discussion of the results, which implies that having more subscribers willing to pay a USO-related premium should lead to a greater benefit for eircom:[24]

> the magnitude of the effect is likely to depend on the number of customers who are prepared to honour the USO function with additional loyalty in the face of offers from competitors that may be more advantageous.

To see why this result is counterintuitive, consider two otherwise identical countries, A and B, which differ only in the split of the total number of subscribers between those who are willing to pay a USO-related premium and those who are not. In particular, suppose that most subscribers in country A belong to Group 1 and are willing to pay a premium, while most subscribers in country B belong to Group 2 and are not willing to pay a premium.

Given that these two hypothetical countries are otherwise identical except that country A has more subscribers who are willing to pay a premium than country B, one would intuitively expect that the USP in country A would enjoy a greater benefit from the enhanced brand recognition than that in country B. Such an expectation would also be consistent with WIK's comment quoted above.

In contrast, WIK's model would predict that the benefit to the USP is identical in the two countries. WIK explained that such a prediction arises because the sizes of the two groups are the outcome of the USP's optimal price-setting process in its model. Specifically, WIK stated that 'lambda [λ] determines the optimal price, which determines NS1 and NS2.'[25]

While these explanations indicate that WIK's model is internally consistent with the assumptions that underpin it, they do not provide a justification for why the intangible benefit seems to be invariant to the proportion of customers who are prepared to pay a USO-related premium.

In order to assess both the magnitude of the enhanced brand value predicted by WIK's model and how sensitive the model is to alternative assumptions, Oxera analysed four alternatives with set-up similar to that of WIK's model.[26] These four alternative models differ in the specific demand functions assumed for Group 1 and Group 2 subscribers. Table 2.4

[23] WIK explains that the sizes of these two groups are endogenously determined in the model.
[24] WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th, p. 8.
[25] WIK-Consult (2012), 'Response to ComReg on certain issues pertaining to intangible benefits of USO', Issue 1, October 17th.
[26] Note that Oxera does not necessarily endorse any of these alternative models as the most appropriate model for assessing the enhanced brand value for the USP.

provides a high-level overview of the main assumptions of these models, and their predictions regarding the profit gain for the USP from enhanced brand value. For ease of comparison, the main assumptions and WIK's predictions are also shown in the table.

**Table 2.4 Alternative models for estimating profit gain due to enhanced brand value**

| Model | Main assumptions | Profit gain due to enhanced brand value |
|---|---|---|
| WIK | Same slope, different intercepts | $(1/2)\lambda qp - (1/16)\lambda^2 qp^2/(p - c)$ |
| Alternative 1 | Group 1 has a perfectly elastic demand function; therefore, it contains the marginal consumer and determines the price | $\lambda qp$ |
| Alternative 2 | Group 2 has perfectly elastic demand function; therefore, it contains the marginal consumer and determines the price | 0 |
| Alternative 3 | Different slopes, different intercepts | $\alpha\lambda qp$, where $\alpha \in (0,1)$ |
| Alternative 4 | Unit demand, uniform valuation | $\beta\lambda qp$ where $\beta = NS_1/[(NS_1+NS_2)(1+\lambda)] \in (0,1)$ |

Note: In some alternatives, the predicted profit gain due to enhanced brand value is approximate.
Source: Oxera analysis.

The benefit of enhanced brand recognition predicted by these four alternative models is in the range of 0–$\lambda qp$. Without further information on the empirical values of certain parameters, it is difficult to know exactly where some of these predictions lie within the range. It is interesting to note that WIK's prediction, of around $(1/2)\lambda qp$,[27] lies approximately in the middle of this range.

While the assessment of the alternatives provides some comfort regarding the magnitude of the predicted benefit of the enhanced brand value from WIK's model, it also highlights the relatively wide range of potential outcomes that can result from small changes to the assumptions.

### 2.3.2 Empirical estimation

Oxera identified a number of areas in WIK's empirical analysis that are either unsatisfactory, or require further justification and explanation in future applications.

**Inconsistency in the empirical approach to estimating the USO-related premium**

As noted in section 2.2.2, WIK separates customers into two groups that differ in their willingness to pay a USO-related premium based on survey Question 9, which asks whether the fact that eircom is the USP makes customers more or less likely to switch away. However, its estimation of the USO-related premium is based on the difference in the trigger price increase between two types of customers identified via another survey question (Question 6B), which asks whether different features of the USO make customers feel more positive or more negative about eircom, and thus is more targeted to reveal the emotional brand effect.

On the face of it, either Question 9 or Question 6B of the survey could be used for identifying the two groups of subscribers discussed in WIK's theoretical model. In fact, a representative from Amárach confirmed that these two questions were both designed for identifying whether a respondent is willing to pay a USO-related premium.[28] Therefore, both questions should have been used to identify the two groups of subscribers and to estimate the USO-related premium.

[27] WIK's prediction contains two terms. However, the value of second term is very small (less than 1% of the first term for both non-DSP and DSP subscribers).
[28] Based on a call with Amárach on September 27th 2012.

However, based on the data received by Oxera, there appears to be a significant difference in the estimates of the USO-related premium depending on which question is used to identify the groups (see Table 2.5). Note that the data received by Oxera does not allow for separate estimation of the USO-related premiums for the DSP and non-DSP subscribers. In addition, the results with respect to the difference in trigger price based on Question 9 suggest that those who attach value to the USP are less willing to pay a premium, which again is counterintuitive and raises questions about the reliability of the results.

**Table 2.5 Alternative estimates of USO-related premium (λ)**

| | Group 1 | | Group 2 | | |
|---|---|---|---|---|---|
| | No. of respondents | Trigger price increase | No. of respondents | Trigger price increase | Difference in trigger price increase |
| | (a) | (b) | (c) | (d) | (e) = (b) – (d) |
| Based on Question 6B | 389 | ✂ | 37 | ✂ | ✂ |
| Based on Question 9 | 286 | ✂ | 106 | ✂ | ✂ |

Note: The trigger price increase is based on answers to Question 11. The average trigger price increase for all sub-questions of Question 6 is shown in the table for the results based on Question 6B. For Question 6B Group 1 includes those who said that the different features of the USO made them feel positively about eircom, and Group 2 includes those who said that these features make them feel negatively about eircom. For Question 9 Group 1 includes those who said that eircom's role as the USP makes them less likely to switch, and those in Group 2 who said that they were more likely to switch as a result of eircom's USP status. These estimates do not separate between DSP and non-DSP customers.
Source: Oxera analysis, based on Amárach survey results.

### The small sample size used in the estimate of the USO-related premium for DSP subscribers

As shown in Table 2.1, the ✂ difference in trigger price increase for DSP subscribers is based on the survey answers of only three DSP subscribers.[29] A sample of three data points cannot be considered a sufficiently robust and representative sample, and is unlikely to be a reliable basis for drawing conclusions. Such a small sample size creates uncertainty about the reasonableness of the estimate of the USO-related premium for DSP subscribers, as well as the estimate of the benefit of enhanced brand value from DSP subscribers. Given that the benefit of enhanced brand recognition accounts for a substantial part of the total intangible benefits for eircom, this issue is particularly important.

WIK itself acknowledges the concern regarding the small sample size. It explored the potential of expanding the sample in the estimation of the λ. For example, rather than including only those individuals who answered negatively or positively for all six sub-questions of Q6B, WIK undertook sensitivity analysis which included individuals who answered negatively for most of the questions. WIK states that incorporating additional individuals in this way would result in a sample size that would be only marginally larger, with 11 individuals rather than three.[30] Oxera has not had access to the resulting estimate of λ from this approach.

WIK agrees that a larger survey sample should be used in future 'so as to ensure sufficient reliability for the results'.[31] However, for the current application, in the absence of any alternatives, and given that the results are claimed to be logical and representative of eircom's customers, WIK concludes: 'the current data, while less robust than we would have liked, are good enough to use for the current years in the absence of any alternatives.'[32]

[29] Based on the survey data provided by WIK, it is not clear whether the responses of two or three individuals are included in the final estimate.
[30] WIK-Consult (2012), 'Response to ComReg on Certain Issues Pertaining to Intangible Benefits of USO', Issues 2 and 3, October 26th.
[31] Ibid.
[32] Ibid., p. 6.

However, the current sample size used in WIK's analysis remains too small to ensure a robust estimation of λ. Re-running the survey for the current application may not be proportionate owing to the high costs involved. However, in future applications the survey should be undertaken with a larger sample so as to ensure the robustness of the results.

**WIK's empirical estimate does not capture the benefit from eircom's business customers**

WIK's empirical estimation of the benefit from enhanced brand recognition does not include the benefit that eircom derives from business customers. Instead, WIK assumes that this potential benefit is small in order to be consistent with practice in other Member States.[33] However, no evidence is provided to support the conclusion that the benefit from eircom's business customers is likely to be small.

## 2.4 Summary and recommendations

While the general high-level conceptual approach adopted by WIK to estimate the USO-induced brand benefit is reasonable, this review has identified a number of issues with the theoretical model proposed by WIK, and its empirical research to populate this model.

Specifically, WIK's theoretical model has a counterintuitive prediction that the benefit of the enhanced brand recognition is independent of the number of subscribers who are willing to pay a USO-related premium. This prediction is also contrary to WIK's discussion, which implies that having more subscribers willing to pay a USO-related premium should lead to a greater benefit for eircom. The prediction raises questions about the validity of the assumptions of the model as well as its applicability. For future submissions, the assumptions and/or the construction of the model should be modified such that it does not yield counterintuitive predictions, or it should be established that the counterintuitive results are actually a close approximation of the reality.

Similarly, in future applications, the concerns identified in WIK's empirical estimation should be addressed. In particular, the identification of the two groups of subscribers and the estimation of the USO-related premium should be based on consistent survey questions. Currently, justification has not been provided for taking such an approach; nor has the estimate of the USO-related premium based on the responses to survey Question 9 been presented.

In addition, the presentation and discussion of the survey results could benefit from greater clarity in future submissions, particularly in relation to the estimation of the USO-related premium for DSP and non-DSP subscribers. eircom has provided all of the data requested by Oxera; however, Oxera was still unable to verify WIK's estimates by applying WIK's stated methodology to the survey data.

Lastly, Oxera considers that the current sample size used in WIK's analysis is too small to ensure a robust estimation of λ. The survey sample size should be increased in future applications in order to obtain a robust and representative sample for the estimation. In addition, when designing future surveys, some survey questions should be modified such that they are more closely related to the model and the parameters they are intended to estimate.

[33] WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th.

# 3 Ubiquity

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 migrants 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 benefit can arise from the ability of the USP to market to business customers that it is able to serve in any location in the country.

## 3.1 International precedent

Telecommunications regulators in other countries have adopted various approaches to estimate the ubiquity benefits as part of their overall assessment of the intangible benefits of the USO. In 2008, CMT multiplied the number of unprofitable customers who became profitable after moving to economic areas by the percentage of new subscribers who chose Telefónica. CMT used the number of households moving from towns of fewer than 10,000 inhabitants to those with more than 10,000 inhabitants as a proxy for individuals moving from uneconomic to economic areas.[34]

Other 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 assessment. While Oftel/Ofcom did quantify this benefit, they determined that the benefit was small based on an assessment that only 1% of the population live in uneconomic areas.[35] Section 6 presents further details on the resulting estimates.

## 3.2 Estimating the ubiquity benefit

### 3.2.1 ComReg's guidance

ComReg's principles and methodologies paper explains that eircom's position as the USP provides it with a presence throughout the country, which it can leverage to generate ubiquity benefits. ComReg cites three ways in which ubiquity benefits can arise:[36]

- migration flows from uneconomic to economic areas where customers remain with the USP rather than switching to an alternative provider;
- the ability to market the organisation to business customers as being able to serve them in any location in Ireland;
- the USP draws a proportionate share of the overall economic benefits of the sector associated with the positive network externalities arising from universal connectivity.

ComReg suggests that these ubiquity benefits can be captured by determining the number of people who move from uneconomic to economic areas and remain as customers of the USP,

[34] BEREC (2010), op. cit; Commission for Communications Regulation (2010), 'Costing of universal service obligations: principles and methodologies', Consultation 10/94, November 30th.
[35] 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; Commission for Communications Regulation (2010), 'Costing of universal service obligations: principles and methodologies', Consultation 10/94, November 30th.
[36] Commission for Communications Regulation (2010), 'Costing of universal service obligations: principles and methodologies', Consultation 10/94, November 30th, p. 39.

or by estimating the number of consumers who would have chosen an alternative operator if they had been aware of the alternatives.[37]

### 3.2.2 WIK's approach

WIK uses one of the approaches considered by ComReg to estimate the ubiquity benefits arising from migration flows. Specifically, WIK estimates the ubiquity benefit as the profit that eircom derives from retaining customers who move from uneconomic to economic areas relative to what it would have obtained had it not been the USP:

> ubiquity benefit = number of eircom subscribers moving from uneconomic to economic areas * ß * (ARPU – avoidable cost) Equation 2

where beta (ß) is the percentage difference between eircom's market share among its subscribers moving from uneconomic to economic areas and eircom's market share in economic areas. ß > 0 indicates that there is a positive ubiquity benefit for eircom.

The number of individuals moving from uneconomic to economic areas is calculated as the percentage of individuals who change address in Ireland, multiplied by the number of fixed subscriber lines in uneconomic areas in the 2009/10 financial year. This calculation implicitly assumes that the percentage of the total population who change address in Ireland is representative of the percentage of people who move from uneconomic to economic areas in a given year.

In order to estimate ß, WIK assumes that eircom's 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. WIK estimates eircom's market share in economic areas using the ratio of eircom's (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, WIK determines that eircom has a market share of ✂% among migrants from uneconomic to economic areas and a market share of ✂% in economic areas.[38]

Lastly, to calculate the ubiquity benefit that eircom derives from these extra customers, WIK takes the number of the customers that eircom retains among those who move from uneconomic to economic areas and multiplies this by the net benefit (ARPU – avoidable cost) per line in economic areas.[39] WIK estimates a ubiquity benefit of €15,091.[40]

## 3.3 Assessment

To an extent, WIK's approach is likely to result in an overestimate of the ubiquity benefit since it assumes that ubiquity is the only reason why customers of eircom who move from uneconomic to economic areas may choose to remain as customers of eircom. However, as noted by WIK, customers may choose eircom because they consider that it is better than its competitors.[41]

[37] Commission for Communications Regulation (2010), 'Costing of universal service obligations: Principles and Methodologies', 10/94, November 30th.
[38] WIK quotes a market share of ✂% and then makes a correction ✂; this results in a final market share of ✂%. WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th.
[39] WIK calculates the net benefit per line by dividing eircom's total profit in economic areas by the number of fixed lines in economic areas. The relevant figures are from the area model that Oxera has not reviewed.
[40] Based on spreadsheets provided to Oxera on November 26th 2012; WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th. Based on the inputs provided, Oxera has calculated the total ubiquity benefit to be €15,233. Multiplying the number of uneconomic lines (✂) by the percentage of individuals changing residence in Ireland (✂%), WIK notes that the result is ✂; Oxera's calculation, however, gives a result of ✂, which leads to the minor discrepancy in the estimated benefit.
[41] WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th.

As discussed earlier, WIK makes a number of assumptions when evaluating the ubiquity benefit, but does not provides significant justification for many of them. Oxera has identified a number of potential concerns with the assumptions adopted by WIK, as discussed below.

First, WIK assumes that the percentage of eircom's customers moving from uneconomic to economic areas is the same as the percentage of people changing address in Ireland in general. It is not clear whether this assumption is appropriate and whether it is likely to lead to an over- or underestimate of the number of eircom's customers moving from uneconomic to economic areas.

It would potentially be possible to obtain a more accurate estimate of the percentage of subscribers moving from uneconomic to economic areas based on survey data. The current survey contains a question on whether a respondent has moved from rural to urban areas in the last ten years. According to WIK, relying on responses to this question may overstate the number of consumers moving from uneconomic to economic areas because there are more rural customers than uneconomic customers. However, in future applications, a specific question in the survey that could be used to estimate this figure should be considered.

Second, WIK uses the number of uneconomic lines in the 2009/10 financial year (✂) in estimating the ubiquity benefit. It is not clear why the number of uneconomic lines is used for this analysis, rather than the number of subscribers in uneconomic areas (✂, which was used in estimating the value of enhanced brand recognition).[42]

Third, WIK uses the average net benefit per new subscriber for fixed-line subscription in an economic area to calculate the extra profit that eircom derives from migrant subscribers.[43] The use of the number of subscribers to estimate the net benefit is inconsistent with the use of the number of lines to estimate the proportion of customers who move from uneconomic to economic areas.

Furthermore, WIK's estimation of net benefit per subscriber in the ubiquity calculation differs from that in the enhanced brand recognition section. In the ubiquity calculation, WIK estimates the net benefit per subscriber in economic areas to be €✂, which is ✂ than the average profit of both the non-DSP subscribers (€✂) and the DSP subscribers (€✂).[44]

WIK has explained that the profit per subscriber value in the ubiquity section is based on all customers, including business customers. In contrast, the DSP and non-DSP subscribers are residential subscribers with lower revenues on average.[45] However, since WIK multiplies the per-subscriber profit value with the number of subscribers who move from uneconomic to economic areas, it is not clear that the average profit estimate is affected by the profit level of business customers. Further clarification on whether benefits to businesses are included in the current estimate would be useful in future assessments.

## 3.4 Summary and recommendations

Overall, Oxera finds that the conceptual approach used to calculate the ubiquity benefit appears to be reasonable. However, to improve the assessment process in future applications, further justifications regarding the assumptions adopted in the analysis should be provided, and consistency in the estimation of the various intangible benefits should be ensured. In addition, WIK's calculation does not include network externalities, which, in

[42] As provided to Oxera in the updated input parameters received on October 30th 2012.
[43] WIK-Consult (2012), 'Response to ComReg on certain issues pertaining to intangible benefits of USO', Issue 4, October 17th.
[44] As provided to Oxera in updated spreadsheet for enhanced brand recognition estimate on October 30th 2012.
[45] WIK-Consult (2012), 'Response to ComReg on certain issues pertaining to intangible benefits of USO', Issue 4, October 17th.

principle, should also be captured in the total ubiquity benefits.[46] This is an aspect that should be considered in future applications.

[46] Commission for Communications Regulation (2010), 'Costing of universal service obligations: Principles and Methodologies', 10/94, November 30th, p. 41.

# 4 Life-cycle benefits

Subscribers who are currently unprofitable may become profitable in the future as a result of changes in their usage of phone services. In other words, from a life-cycle perspective, some uneconomic subscribers may actually be economic. Therefore, it may be beneficial for the USP to provide unprofitable services to these customers in the short term in order to reap future benefits when they become economic. Note that in order for the life-cycle benefit of a customer to accrue to the USP, it must be that these consumers continue to be served by the USP when they become profitable.

The life-cycle benefit differs from the ubiquity benefit discussed in the previous section, in that the former arises from changes in customers' consumption patterns over time, while the latter is due to customers' spatial changes.

## 4.1 International precedent

Oftel/Ofcom considered the life-cycle benefit 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:[47]

- 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 (NPV) 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.

Like Ofcom, ARCEP estimated the costs and revenues of customers over a five-year period to determine whether they became profitable; whereas AGCOM determined that the life-cycle perspective did not generate any additional benefit for Telecom Italia.[48]

## 4.2 Estimating the life-cycle benefit

### 4.2.1 ComReg's guidance

In Decision 11/42, ComReg considers that customers who become profitable over time should be excluded from the calculation of the net cost of the USO. As the life-cycle benefit reflects the reduction in the net cost of the USO when these customers are excluded, it should be incorporated in the net cost calculation, rather than as part of the intangible benefits. ComReg also notes that it remains appropriate that the life-cycle benefit is acknowledged as an intangible benefit, and that it should be included in the calculation of the net cost.[49]

In order to calculate this benefit, information needs to be obtained on which customers are currently uneconomic and may become profitable in the future. It is therefore important to link household telephone expenditure with characteristics that vary over time, such as the age of customers.

[47] BEREC (2010), op. cit.
[48] Commission for Communications Regulation (2010), 'Costing of universal service obligations: principles and methodologies', Consultation 10/94, November 30th.
[49] Commission for Communications Regulation (2011), 'Decision on the Costing of universal service obligations: Principles and Methodologies', 11/42, May 31st, para 4.22.

### 4.2.2 WIK's approach

WIK states that while the life-cycle benefit is a dynamic concept, the USO model is static in nature. In order to take the life-cycle effects into account, WIK calculates a percentage adjustment to eircom's 2009–10 revenues (or expenditure from the customer perspective) to reflect the expected change in eircom's future revenues as a result of changes in the characteristics of the customers.[50]

WIK's calculations of the mark-up assume that the cost associated with serving households remains constant over time. The revenue earned from households is estimated over a 25-year period based on key assumptions. First, the distribution of telecoms expenditure, which remains constant over time, is determined only by the age of the head of household (HOH). However, the percentage of people in each age category evolves according to population projections from the Central Statistics Office (CSO). The distribution of expenditure and population by age group used by WIK in its calculation is illustrated in Figure 4.1.

**Figure 4.1 Distribution of expenditure and population by age group**

Source: ✂

As shown above, the increase in the population in the middle age groups (35–64), combined with the greater spending of these groups, implies that the expenditure of the representative HOH will increase at first and then decline over time. Overall, WIK estimates the adjustment to the revenue to be a positive mark-up of ✂%.

Finally, WIK estimates the life-cycle benefit as the reduction in the net costs of USO due to the removal of uneconomic customers that are economic in a life-cycle perspective.[51] Specifically, WIK estimates the net cost of the USO twice—once with the mark-up to the revenue figures and once without it—and calculates the difference between the two estimates as representing the life-cycle benefit. WIK carries out this analysis for each of the customer and the area models.

For the area model, WIK applies the adjustment to total revenue of each area and concludes that 'no uneconomic areas were identified as economic from a life cycle perspective', implying that there is no life-cycle benefit based on the area model.

In the customer model, WIK applies the mark-up adjustment to all revenue since it is not able to identify individual customers. WIK commented that this is a conservative approach, as it

[50] WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th.
[51] WIK-Consult (2012), 'Response to ComReg on Certain Costing Issues Pertaining to the USO Net Cost Model', Issues: 5, 12, 14, 15 and 16, September 20th.

may not capture all individual customers who are economic from a life-cycle perspective. [52] WIK's final estimate of the life-cycle benefit based on the customer model is €164,560.[53]

## 4.3 Assessment

Oxera considers that WIK's conceptual approach to calculating the life-cycle benefit is reasonable. In addition, WIK's overall conceptual approach to estimating the mark-up appears reasonable.

In terms of the empirical estimation of the mark-up, it may be possible to improve on some of the explanations and justifications for the assumptions used in the calculation in future applications. For example, WIK implicitly assumes that the distribution of telecoms expenditure and demographic changes in uneconomic areas are the same as those for Ireland as a whole. WIK notes that it has no information to test the validity of this assumption and justifies it based on the rationale that 'lifecycle benefit for uneconomic areas was estimated to be zero' in any case.[54]

Oxera understands that it may be difficult for WIK to base this assumption on data or its survey questionnaire, and considers that this assumption may indeed be reasonable. However, the fact that WIK bases its justification on the result that the life-cycle benefit estimated using the area model is zero is tautological: if WIK had used a different set of assumptions, the life-cycle benefit for uneconomic areas might not have been estimated to be zero. Therefore, further justification should be provided in future applications.

Additionally, the 25-year time horizon used by WIK to analyse the life-cycle benefit appears long compared with international precedents—eg, Ofcom and ARCEP both use five years in their analysis of the life-cycle benefit. WIK justifies this horizon as it is the lifetime of the investment; however, the lifetime of customers is likely to be the more relevant horizon over which to estimate the life-cycle benefit.[55]

WIK agrees that the lifetime of customers may be shorter than 25 years and has undertaken sensitivity analysis with mark-up factors based on five- and ten-year horizons. Its sensitivity checks indicate that the choice of 25-year horizon is unlikely to have a major impact on the estimated value of the life-cycle benefit.[56] However, an argument for using a 25-year time horizon because it represents the lifespan of investment is not satisfactory. Instead, in future applications, using the relevant lifetime of eircom consumers should be considered in order to justify a particular choice of time horizon.

Lastly, Oxera has not been able to confirm how the final aspect of the estimation of the €164,560 life-cycle benefit has been estimated. In response to a request for additional information required to replicate the estimate, WIK indicated that it would not be practical to make this data available through conventional database tools.[57]

[52] WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th, p.29. Oxera requested this model from eircom, but eircom noted that it would not be practical to make this data available through conventional database tools. Therefore, Oxera has not been able to verify this finding.
[53] Based on spreadsheets provided to Oxera on November 26th 2012; WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th.
[54] WIK-Consult (2012), 'Response to ComReg on Certain Costing Issues Pertaining to the USO Net Cost Model', Issues: 5, 12, 14, 15 and 16, September 20th, p. 5.
[55] Ibid.
[56] The mark-up based on a ten-year horizon (using the same M2F2 base scenario described above) is ><% and based on a five-year horizon is ><%. WIK-Consult (2012), 'Response to ComReg on Certain Costing Issues Pertaining to the USO Net Cost Model', Issues: 5, 12, 14, 15 and 16, September 20th, p. 5.
[57] WIK-Consult (2012), 'Response to ComReg on Certain Costing Issues Pertaining to the USO Net Cost Model', Issues: 5, 12, 14, 15 and 16, September 20th.

## 4.4 Summary and recommendations

While Oxera has not been able to confirm how all aspects of the life-cycle benefit have been calculated—due to practicality issues to have access to the data through conventional database tools—, Oxera considers that WIK's conceptual approach for estimating the life-cycle benefit is reasonable, and consistent with ComReg's principle of incorporating it in the net cost calculation.

Oxera's review focused on a key component of the estimation of the life-cycle benefit: WIK's empirical estimation of the mark-up to revenues. The review indicates that, in future applications, further justification would be required of the assumption on the distribution of telecoms expenditure and demographic changes in uneconomic areas. In addition, in any future assessment, the lifetime of customers should be used instead of the lifetime of investment to estimate the life-cycle benefit, even though this change would not have a significant effect on the estimated lifetime benefit.

# 5 Marketing benefits

Marketing benefits associated with the USO refer to the benefits that the USP may derive from having access to customer data that it acquired because it is the USP, and from being able to advertise itself on uneconomic public payphones at no cost. A number of regulatory authorities consider this category of intangible benefits to be significant.

## 5.1 International precedent

A range of marketing benefits have been considered by telecoms regulators in other countries. AGCOM 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 in 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. While AGCOM noted that there may be benefits as a result of having access to customer databases, it determined that these did not generate any benefit in the case of Telecom Italia.[58]

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.

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.[59]

In France, the benefits of access to customer databases were considered as part of the marketing benefits. This was estimated both in terms of the benefit from sending 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).[60]

## 5.2 Estimating the marketing benefit

### 5.2.1 ComReg's guidance

ComReg identifies three potential types of marketing benefit:[61]

- commercial benefits related to having access to, and the use of, customer data (eg, this may reduce the need for the USP to conduct market research);
- commercial benefits of selling customer data to third parties for marketing purposes;
- savings of advertising costs and logo display in uneconomic areas via payphones/WiFi hotspots.

[58] BEREC (2010), op. cit.
[59] Ibid.
[60] Ibid.
[61] Commission for Communications Regulation (2010), 'Costing of universal service obligations: principles and methodologies', Consultation 10/94, November 30th, p. 43.

ComReg considers that there may be significant advantages for the USP in having access to information on customers (eg, their personal profile and expenditure patterns) that the USP acquires as a result of the USO. While the USP is prohibited from selling this data owing to data protection laws in Ireland, it can directly use the data to target promotional activities. In turn, this could increase the profitability of both economic and uneconomic consumers.[62]

However, ComReg notes 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 USO status. In addition, it suggests that caution needs to be taken in estimating this benefit, as there is potential for double-counting in the enhanced brand recognition effect.[63]

In terms of the methodology to estimate this benefit, ComReg considers that an approach similar to that used by Ofcom would entail determining the income from advertising on uneconomic public payphones, and using this figure to estimate the benefit gained from the logo display and any advertising on such payphones. To do this, ComReg notes, it would be necessary to establish the number of uneconomic payphones that have advertising value.[64]

### 5.2.2 WIK's approach

WIK considers that the benefit related to having access to, and the use of, customer data is implicitly included in the direct cost of the USO (as part of the life-cycle benefit or implicitly in determining the net costs of these services), and should therefore not be included in the estimate of intangible benefits. Similarly, since the sale of customer data is prohibited by law in Ireland, WIK does not consider that this benefit is relevant for inclusion.[65]

WIK therefore estimates the marketing benefits based on eircom's saving on advertising costs from carrying out free advertisement for itself on uneconomic payphones.[66] In the payphone model, WIK estimates that ✂ payphones are of interest from an advertising perspective, of which ✂ are USO payphones. It derives the number of uneconomic payphones from the payphone model[67] by attributing third-party advertising revenue (estimated as €✂) equally across those payphones that are of interest from an advertising perspective.[68] The advertising revenue assigned to all uneconomic USO payphones is summed to estimate the marketing benefit.[69]

WIK has provided an estimate of €20,437 for this benefit.[70]

## 5.3 Assessment and recommendations

Overall, WIK's conceptual approach to calculating marketing benefits from uneconomic payphones is consistent with ComReg's guidelines and those of other regulators.

It is not clear whether savings in advertising costs from using WiFi hotspots are included in WIK's analysis.[71] If they are not, this benefit, in principle, should be quantified and incorporated into the analysis in future applications.

[62] Commission for Communications Regulation (2011), op. cit., para 4.24.
[63] Commission for Communications Regulation (2010), 'Costing of universal service obligations: principles and methodologies', Consultation 10/94, November 30th, p. 43.
[64] Commission for Communications Regulation (2011), op.cit., para 4.49.
[65] WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th.Report for eircom
[66] Oxera has not had reviewed the payphone model.
[67] WIK-Consult (2012), 'Response to ComReg on certain costing issues pertaining to the USO net cost model', Issues: 5, 12, 14, 15 and 16', September 20th.
[68] WIK-Consult (2012), 'Response to ComReg on certain costing issues pertaining to the USO net cost model, Response to issues 6, 7 and 13', October 9th.
[69] WIK-Consult (2012), 'Response to ComReg on certain costing issues pertaining to the USO net cost model, Response to issues 6, 7 and 13', October 9th, p. 2.
[70] WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th; Based on spreadsheets provided to Oxera on November 26th 2012.

WIK estimates its cost savings from advertising on uneconomic payphones based on the revenue that eircom receives from selling to third parties advertising space in its uneconomic payphones.[72] While Oxera understands that this proxy is used owing to the lack of better data, the proxy itself has some conceptual shortcomings. Specifically, estimates of eircom's cost savings should, in principle, be based on how much it would have cost eircom to advertise itself elsewhere in the same area as those uneconomic payphones are located, rather than advertising free of charge in uneconomic payphones. In future applications, proxies should be used that better capture the cost to eircom of advertising its services elsewhere.

[71] Oxera notes that a figure for WIFI hotspots was quoted in WIK's response to Tera Consultants on item number 18 of action points from the workshop held in Dublin on August 30th, but it is not discussed in WIK's response about re-estimating the marketing benefit.

[72] If the advertising revenue raised from third parties reflects the market price then estimating the marketing benefit on this basis would be likely to lead to the same answer as using the cost to eircom. WIK notes that the Payphone Department has confirmed that the advertising rate charged is the market rate.

# 6 International estimates of intangible benefits

This section considers how WIK's estimates for each intangible benefit compare with those from other countries. In addition, it considers how WIK's estimate of the total intangible benefit compares with those of other countries. These comparisons are provided as a high-level sense check of WIK's estimates and are not intended to be conclusive on their own.

## 6.1 Enhanced brand recognition

ComReg notes that brand recognition is often the largest benefit identified by other regulators when assessing the intangible benefits of the USP. As shown in Table 6.1, brand recognition accounts for between 51% and 99% of total intangible benefits across countries. Note that both France and Italy include payphone advertising benefits as part of brand recognition benefits (rather than as part of marketing benefits). Therefore, the estimates of different countries are not directly comparable.

It can be seen that WIK's estimate of enhanced brand value is lower than those estimated for USPs in other European countries. The estimates can also be compared by considering them as a percentage of total revenue from fixed-line services in each country (ie, the revenues of all fixed-line services rather than only those of the USP). Based on this comparison, WIK's estimate is also lower than the other countries, with the exception of Spain. However, in terms of the proportion of total intangible benefits, enhanced brand value for eircom is relatively high.

**Table 6.1 International estimates of the value of enhanced brand recognition**

| USP | Regulator | Country | Year | Value (€m) | As a % of total intangible benefits | As a % of total revenue from fixed-line services |
|---|---|---|---|---|---|---|
| Telecom Italia | AGCOM | Italy | 2003 | 15.3 | 76 | 0.11 |
| Belgacom | IBPT | Belgium | 2003 | 10.7 | 50 | 0.53 |
| BT | Oftel/Ofcom | UK | 200 3/04 | £50m–£52m | 81–85 | 0.43 |
| Telefónica | CMT | Spain | 2008 | 5.8 | 61 | 0.08 |
| France Telecom | ARCEP | France | 2008 | 18.3 | 99 | 0.17 |
| **eircom** | **ComReg** | **Ireland** | **2009/10** | **1.8** | **90** | **0.09** |

Note: In France and Italy, payphone advertising benefits are included in enhanced brand recognition rather than marketing.
Source: Commission for Communications Regulation (2010), 'Costing of universal service obligations: Principles and Methodologies', 10/94, November 30th; IBPT (2005), 'Décision du Conseil de l'IBPT du 17 mai 2005 concernant l'évaluation provisoire du coût net du service universel pour l'année 2003'.

## 6.2 Ubiquity

The estimates of ubiquity benefits included in other regulators' net cost calculations of the USO are presented in Table 6.2 below. Several regulators considered ubiquity benefits to be negligible or zero. Two exceptions are Spain and Belgium, which estimated significant ubiquity benefits.

**Table 6.2 International estimates of ubiquity benefits**

| USP | Regulator | Country | Year | Value (€m) | As a % of total intangible benefits | As a % of total revenue from fixed-line services |
|---|---|---|---|---|---|---|
| Telecom Italia | AGCOM | Italy | 2003 | 0 | 0 | 0 |
| Belgacom | IBPT | Belgium | 2003 | 1.7 | 8 | 0.08 |
| BT | Oftel/Ofcom | UK | 2003/04 | insignificant | 0 | 0 |
| France Telecom | ARCEP | France | 2008 | 0 | 0 | 0 |
| Telefónica | CMT | Spain | 2008 | 2.8 | 29 | 0.04 |
| **eircom** | **ComReg** | **Ireland** | **2009/10** | **0.015** | **1** | **0** |

Note: Totals may not sum to one due to rounding.
Source: Commission for Communications Regulation (2010), 'Costing of universal service obligations: Principles and Methodologies', 10/94, November 30th; and ; IBPT (2005), 'Décision du Conseil de l'IBPT du 17 mai 2005 concernant l'évaluation provisoire du coût net du service universel pour l'année 2003'.

## 6.3 Life cycle

As pointed out by WIK, with the exception of Belgium, most regulators assessed life-cycle benefit to be very low or insignificant:

> an international benchmark analysis would lead to the conclusion that NRA's assessing the life cycle effect in relation to the intangible benefits of being an USP end up with the conclusion that it should be almost neglected as being close to zero.[73]

**Table 6.3 International estimates of the life-cycle benefit**

| USP | Regulator | Country | Year | Value (€m) | As a % of total intangible benefits | As a % of total revenue from fixed-line services |
|---|---|---|---|---|---|---|
| Telecom Italia | AGCOM | Italy | 2003 | 0 | 0 | 0 |
| Belgacom | IBPT | Belgium | 2003 | 4.5 | 21 | 0.22 |
| BT | Oftel/Ofcom | UK | 2003/04 | £0–£1m | 0–2 | 0 |
| Telefónica | CMT | Spain | 2008 | 0 | 0 | 0 |
| France Telecom | ARCEP | France | 2008 | 0 | 0 | 0 |
| **eircom** | **ComReg** | **Ireland** | **2009/10** | **0.165** | **8** | **0.01** |

Note. Totals may not sum to one due to rounding.
Source: Commission for Communications Regulation (2010), 'Costing of universal service obligations: Principles and Methodologies', 10/94, November 30th; ; IBPT (2005), 'Décision du Conseil de l'IBPT du 17 mai 2005 concernant l'évaluation provisoire du coût net du service universel pour l'année 2003'.

## 6.4 Marketing

As WIK notes: 'international benchmarks suggest the benefit from advertising in uneconomic areas to be minor. For example, in France the marketing benefits were considered as being negligible.'[74] However, as shown in Table 6.4, a number of other regulators estimate larger marketing benefits than eircom does. These figures are also higher than those of eircom

[73] WIK-Consult (2012), 'Intangible Benefits of Universal Service Provision in Ireland', Report for eircom for the 2009/10 financial year, November 30th, p. 28.
[74] Ibid., p. 32.

when considered as a proportion of total intangible benefits and as a proportion of total revenue from fixed-line services.

**Table 6.4 International estimates of marketing benefits**

| USP | Regulator | Country | Year | Value (€m) | As a % of total intangible benefits | As a % of total revenue from fixed-line services |
|---|---|---|---|---|---|---|
| Telecom Italia | AGCOM | Italy[1] | 2003 | 4.8 | 24 | 0.03 |
| Belgacom | IBPT | Belgium | 2003 | 4.5 | 21 | 0.22 |
| BT | Oftel/Ofcom | UK | 2003/04 | £9m–£11m | 15–18 | 0.08 |
| Telefónica | CMT | Spain | 2008 | 0.8 | 8 | 0.01 |
| France Telecom | ARCEP | France[1] | 2008 | negligible | 0 | 0 |
| eircom | ComReg | Ireland | 2009/10 | 0.020 | 1 | 0 |

Note: [1] In France and Italy, payphone advertising benefits are included in enhanced brand recognition rather than marketing. Totals may not sum to one due to rounding.
Source: Commission for Communications Regulation (2010), 'Costing of universal service obligations: Principles and Methodologies', 10/94, November 30th; and ; IBPT (2005), 'Décision du Conseil de l'IBPT du 17 mai 2005 concernant l'évaluation provisoire du coût net du service universel pour l'année 2003'.

Telecom Italia's marketing benefits are based on an advertising value of €836 per year (or €70/month) for 2,736 phone booths and €279 per year (or €23/month) for 3,125 phone domes. Similarly, Ofcom's estimate of the marketing benefit was based on assumptions that 50% of payphones in uneconomic areas generate revenue of £50–£60 per year.

## 6.5 Total intangible benefits

A comparison of WIK's estimates of intangible benefits with two other recent estimates (see Table 6.5) illustrates that WIK's estimates appear to be in line with those determined for other USPs when considering total intangible benefits as a proportion of fixed-line revenue of the USP and/or GDP.

**Table 6.5 Comparison of estimates of total intangible benefits**

| Name of USP | Country | Year | Intangible benefits as % of fixed-line revenue of USP | Intangible benefits as % of GDP |
|---|---|---|---|---|
| France Telecom | France | 2008 | 0.10 | 0.0010 |
| Telefónica | Spain | 2008 | 0.08 | 0.0009 |
| eircom | Ireland | 2009/10 | 0.16 | 0.0013 |

Source: Commission for Communications Regulation (2012), 'Quarterly Key Data Report', March 13th; Telefónica (2008), 'Annual Report'; France Telecom (2008), 'Annual Report and Corporate Social Responsibility Report'.

# 7 Conclusion

Oxera's review of WIK's estimation of the intangible benefits enjoyed by eircom from its USO focused on the following aspects:

- understanding the approaches considered by WIK;
- assessing WIK's rationale for adopting the particular methodologies for estimating the value of the four identified benefits;
- assessing the soundness of WIK's empirical analysis;
- comparing WIK's approaches and estimates with international precedent.

Oxera's main findings regarding WIK's estimation of each of the four categories of intangible benefits are presented below.

## 7.1 Enhanced brand recognition

WIK's conceptual approach to estimating the USO-induced brand benefit as the difference between eircom's actual profit where some subscribers are willing to pay a USO-related premium and eircom's profit in the counterfactual scenario where it is no longer the USP is sound.

However, the specific theoretical model developed by WIK to estimate eircom's profit in the counterfactual scenario and the USO-induced brand benefit has counterintuitive predictions, which raises questions about the validity of WIK's assumptions, as well as the applicability of its model.

Specifically, the model implies that the benefit from enhanced brand recognition is independent of the number of subscribers who care about the USO. This prediction is counterintuitive and is inconsistent with WIK's premise that a greater number of subscribers willing to pay a USO-related premium should lead to a greater benefit for eircom.

There are a number of concerns with WIK's empirical estimation of the benefit of enhanced brand recognition. Its approach to identifying the two groups of subscribers is inconsistent with its approach to estimating the USO-related premium. WIK has not provided detailed survey results to enable Oxera to verify its estimation of the USO-related premium. Moreover, WIK's estimation of the USO-related premium for the DSP subscribers is based on a very small sample (with two or three data points), which raises questions about the robustness of the estimation. Finally, the benefits of enhanced brand recognition from business customers are not incorporated in WIK's estimation. It would be important to address these concerns in future applications.

## 7.2 Ubiquity

WIK's conceptual approach for estimating the ubiquity benefit is reasonable.

In terms of the empirical estimation, some of the inputs and assumptions used require additional explanation and clarification in future assessments. Despite receiving the information requested from eircom, Oxera has not been able to validate the results for a number of the inputs. In addition, the benefits from network externalities, in principle, should be included. This is an aspect that should be considered in future applications.

## 7.3 Life-cycle benefit

The conceptual approach adopted by WIK is reasonable and consistent with ComReg's guidance. Specifically, the life-cycle benefit is estimated as the reduction in the net cost estimate when economic customers from a life-cycle perspective are excluded from the estimation.

The details of all the aspects of the estimation of the life-cycle benefit are not included in the intangible benefits report; only the calculation of the mark-up used to adjust the revenues in the net cost calculation, which is a key component of the estimation, has been made available. Oxera's review indicates that, in future applications, further justification would be required for the assumption on the distribution of telecoms expenditure and demographic changes in uneconomic areas. In addition, in any future assessment, the lifetime of customers (not investment) should be used when estimating the life-cycle benefit.

## 7.4 Marketing benefits

The conceptual approach used to estimate the marketing benefits from public payphones is consistent with regulatory precedent. However, WIK's proxy for estimating eircom's cost savings from advertising in uneconomic payphones has some conceptual shortcomings. In future applications, proxies should be used that better capture the cost to eircom of advertising its services elsewhere.

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