Review of the Universal Service Obligation

Annexes

Consultation document

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Contents

Annex D

Research

D1: Introduction

D.1.1 As part of its review of the Universal Service Obligation in telecoms, Ofcom commissioned a number of quantitative surveys and pieces of qualitative research. Details of these are in included at the end of this Annex. Broadly, the research fell into three main sections:

- Affordability;
- Public Call Boxes; and
- Services for consumers with disabilities.

D.1.2 This document provides an overview of the key findings from this research and is set out in three main sections.

Headline findings

D.1.3 Affordability

- in total, around 3 per cent of UK adults do not have a fixed line phone at home because they cannot afford one; this equates to approximately 750,000 households;
- those most likely to be without any telephony at home are typically non-working, lower income groups and DE social groups;
- the majority of those using BT's Light User Scheme or In Contact are satisfied with the scheme and say that the schemes help keep costs down
- significant proportions of users of both schemes say they would not have a phone if the schemes were removed; and
- although the schemes are beneficial to their users, it seems that many consumers who might benefit from these schemes are not aware of them.

D.1.4 Public Call Boxes (PCB)

- public call box use is in decline – 37 per cent of UK adults claim to use a PCB at least occasionally– a significant decline from 46 per cent six months previously;
- increased mobile phone penetration has had an impact on PCB use. Three-quarters of adults now own a mobile phone and the majority of these claim to use PCBs less frequently compared with before they had a mobile phone; and
- qualitative research showed that regardless of level of usage, people placed a high value on having the option to use a PCB.

D.1.5 Services for consumer with disabilities

- Typetalk users value the service highly – it remains the quickest way to contact the hearing community and resolve a call in real time. This is despite some technical problems and lack of flexibility and spontaneity.

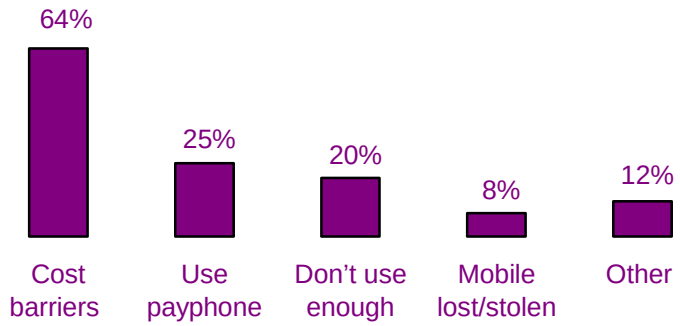
D2: Affordability

Homes without a fixed phone

D.2.1 The survey undertaken in May 2003 found that one per cent of UK adults lived in households with no fixed line or mobile phone; this equates to approximately 250,000 households. Those most likely to be without any method of telephony at home were non-working, lower income groups, DE social groups, small households, and consumers living in areas of high deprivation. The majority of these consumers rely on PCBs as their main method of telephony (92 per cent), and spend around £4 per month on calls. These figures should be treated as an indicative finding only, as they are based on a small sample – only 25 people.[1]

D.2.2 One in ten adults without telephony at home mentioned a reason related to cost[2], for not having a phone at home. This equates to about 150,000 households that were excluded from fixed and mobile telephony for 'affordability' reasons.

Figure D.1: Reasons for not having a fixed or mobile phone in household
Base: All without fixed line or mobile phone in household, May 2003 (Base: 25*)



** small base so apply caution to results and treat as indicative only*

D.2.3 Seven per cent of adults lives in households that have a mobile phone, but do not have a fixed line telephone[3]. In May 2003, some of those with only a mobile phone at home also mentioned cost as a reason for not having a fixed line phone; so in total, around three per cent do not have a fixed-line phone at home because they cannot afford one[4] - about 750,000 households.

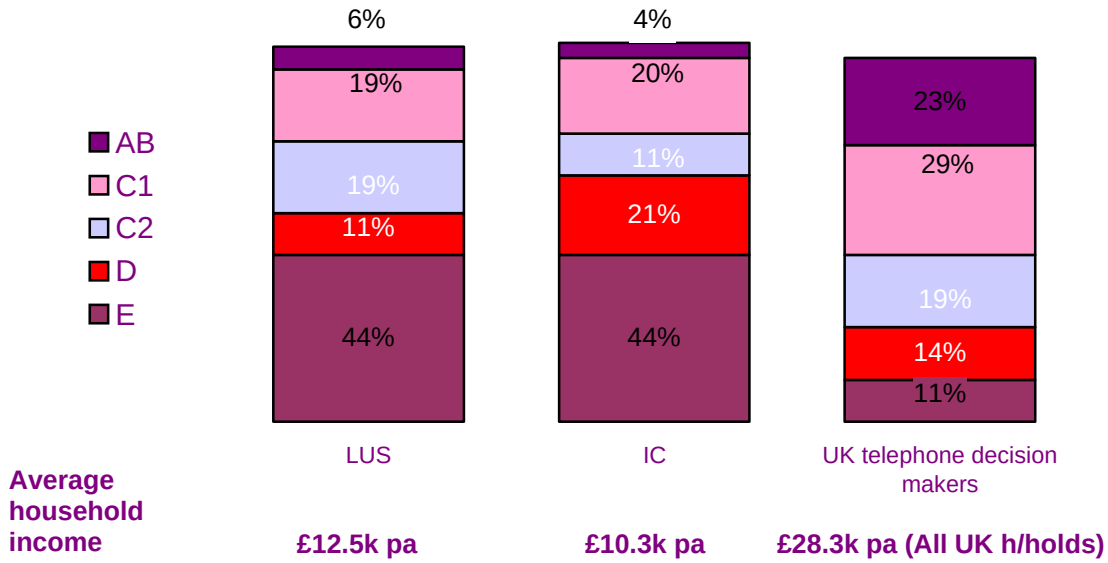
Light User Scheme and In-Contact: user profile

D.2.4 BT's Light User Scheme (LUS) and In-Contact (IC) scheme aim to help those who have difficulty in affording a fixed line phone. Users of both schemes are heavily biased towards social group E – those that are entirely dependent on a state income. In addition, significant proportions (around six in ten) are

[1] Oftel research, May 2003
http://www.ofcom.org.uk/static/archive/oftel/publications/research/2003/q13fix&mobr0703.htm
[2] fixed line rental, regular bills, fixed line connection charges, mobile subscription, mobile calls costs, fixed handset/ equipment or mobile handset
[3] Ofcom research, June 04
[4] Oftel research, May 02
http://www.ofcom.org.uk/static/archive/oftel/publications/research/2003/q13fix&mobr0703.htm

claiming some type of entitlement to assist with their income. Figure D.2 shows the social group and average household income profile of scheme users compared to the UK average.

Figure D.2 - Socio economic and income profile of scheme users
Base: Scheme Users, May/June 2004, (Base: 200 LUS, 203 In Contact)/ UK fixed phone decision makers aged 15+, June 2004 (Base: 1586)



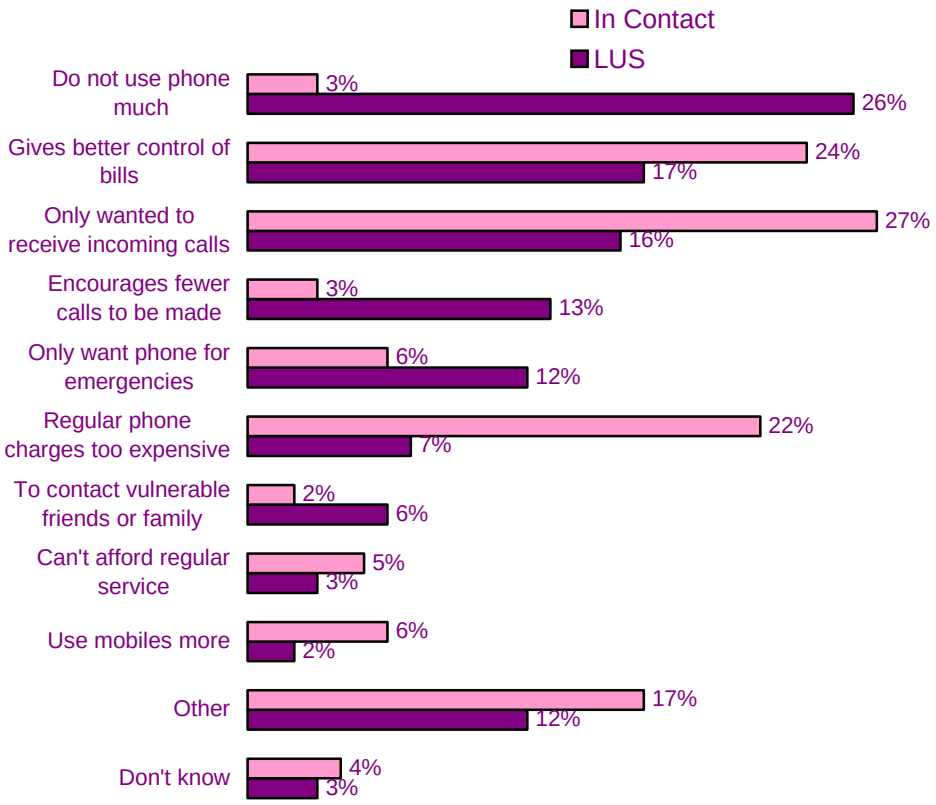
D.2.5 There are some differences between the user profiles of LUS and IC. LUS customers are predominantly older (6 in 10 are aged 65+) and many are living on a state pension only, which explains the prominence of social group E. IC customers are much younger (with just 8 per cent aged over 65+), more likely to have children and be in low income households. Half are non-working, unemployed or retired and hence many are in social group E.

D.2.6 So broadly, 60 per cent-70 per cent of the users of the schemes seem to be the 'right' type of people: non-working, low income, DE social group households. These characteristics are in line with the profile of consumers that do not have a fixed line phone at home, often for affordability reasons.

Light User Scheme and In-Contact: impact on users

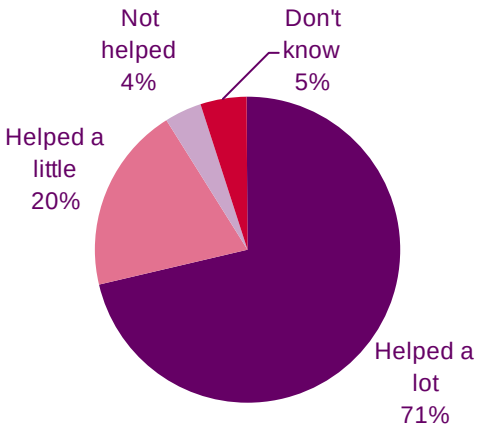
D.2.7 Many of those using LUS did not use their phone much, and this was the main reason why they started to use the scheme. In addition, providing a control on costs was another important factor. For IC users, being able to control costs and affordability issues were the main reasons for becoming scheme users. In total 26 per cent of LUS and 49 per cent of IC users, started to use the scheme for a cost or cost control reason (for example, better control of bills, regular phone charges too expensive, can't afford regular service).

Figure D.3 – Main reasons for using scheme (unprompted)
Base: Scheme Users, May/June 2004, (Base: 200 LUS, 203 In Contact)

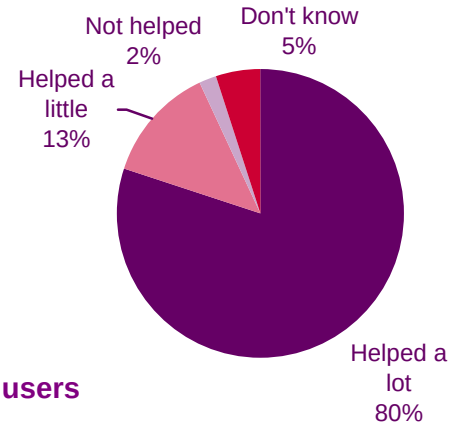


D.2.8 The majority of scheme users say that the scheme does help them keep costs down, with only four per cent of LUS users and two per cent of In Contact users saying that the scheme does not help. These figures were slightly higher amongst former scheme users (eight per cent LUS and 10 per cent IC).

Figure D.4 – Extent scheme helps keep costs down
Base: Scheme Users, May/June 2004, (Base: 200 LUS, 203 In Contact)



LUS users



IC users

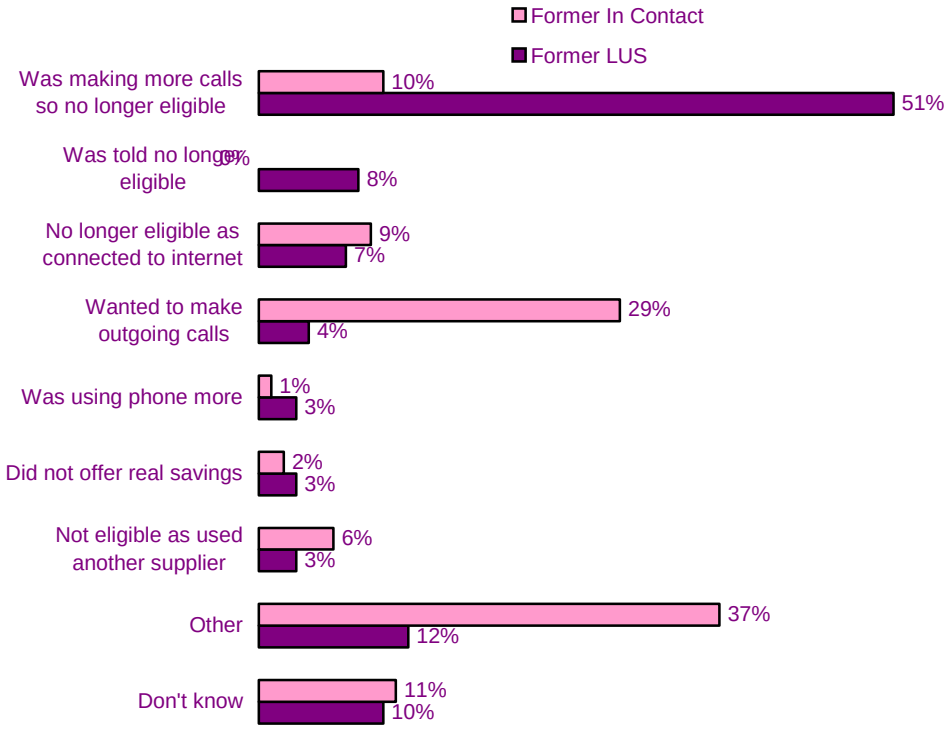
Satisfaction with schemes

D.2.9 The vast majority of scheme users found their scheme easy to use, just one per cent of LUS and two per cent of IC users found them difficult to use. These figures were only marginally higher for former scheme users at three per cent and seven per cent respectively.

D.2.10 The vast majority (94 per cent IC and 96 per cent LUS) of scheme users were satisfied with the scheme overall – even among former scheme users, satisfaction stood at 88 per cent and 85 per cent for LUS and IC respectively. Amongst those former IC users who expressed some dissatisfaction with the scheme a variety of reasons were given. These included finding the scheme expensive, not being able to call 0800 numbers, no caller ID (1471) and not fully understanding how the costs were calculated.

D.2.11 Reasons given by former scheme users for no longer using the scheme were mainly due to a desire to make more calls (former LUS users) or be able to make out-going calls (IC). Relatively small proportions said that they stopped using the schemes as they did not offer any real savings (four per cent of former LUS users and seven per cent of former IC users) or because they did not understand how the schemes worked.[5]

FigureD.5 – Main reason for stopping using scheme (unprompted)
Base: Former Scheme Users, May/June 2004, (Base: 200 former LUS, 200 former In Contact)



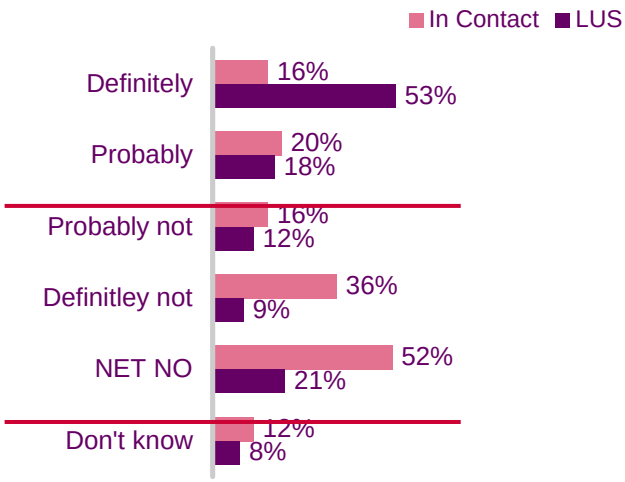
[5] The survey of former scheme users was conducted by telephone so may not represent any former users who stopped using a fixed-line phone after using the scheme. However the incidence of un-contactable former users on the database was not unexpectedly low, indicating that if there are examples of these consumers they would represent a small minority.

Hypothetical outcomes if schemes were withdrawn with no replacement

D.2.12 Scheme users were asked whether they would keep their fixed line phone if the scheme was withdrawn. Significant proportions of users of both schemes say they would not have a fixed line phone if the schemes were removed – see [figure D.6]. More IC (52 per cent) users would not keep fixed phone if their BT scheme was withdrawn, compared to 21 per cent of LUS users. Affordability was the main reason – mentioned spontaneously by half (48 per cent[6]) of LUS users that would not keep their fixed phone and seven in ten (72 per cent) IC users.

D.2.13 Younger scheme users were less likely to keep a fixed phone if the scheme was withdrawn – this may be related to this group being more likely to have a mobile. LUS users would be more likely to keep a standard rate phone, perhaps as they are not heavy phone users and therefore cost escalation was not a concern to them.

Figure D.6 – Likelihood of keeping a fixed line phone on 'standard' tariff if scheme was withdrawn
Base: Scheme Users, May/June 2004, (Base: 200 LUS, 203 In Contact)



D.2.14 So, with a majority of current scheme users saying that the scheme has helped them to keep costs down, and significant proportions of users claiming that the scheme has enabled them to have access to a fixed line, the value of the schemes to most users appears to be high.

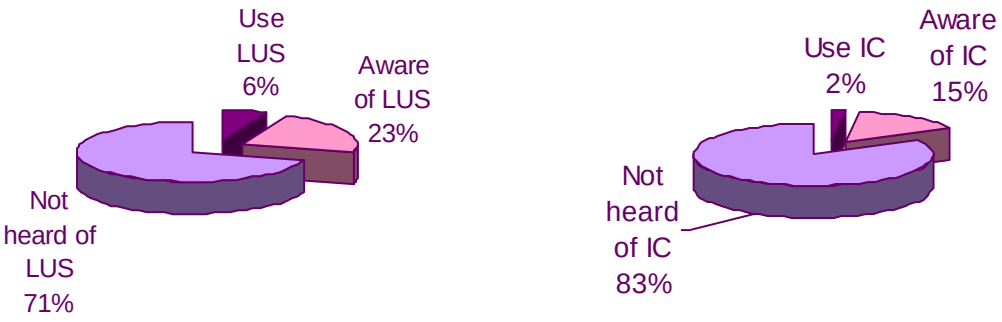
Awareness of schemes

D.2.15 Although the schemes are clearly beneficial to their users, as noted earlier there are still consumers who are excluded from telephony for affordability reasons. Looking at awareness of the schemes it seems likely that many of these consumers are not aware of LUS or IC – schemes that might help them be able to afford a fixed line telephone. There was no significant difference in

[6] Base size less than 100, so figures are only indicative

awareness levels of either scheme according to social group or household income.

Figure D.7 – Awareness of Light User Scheme and In Contact
Base: LUS: UK adults aged 15+, Feb 2004, (Base: 2131)
Base: IC: UK adults aged 15+, May 2003, (Base: 2116)

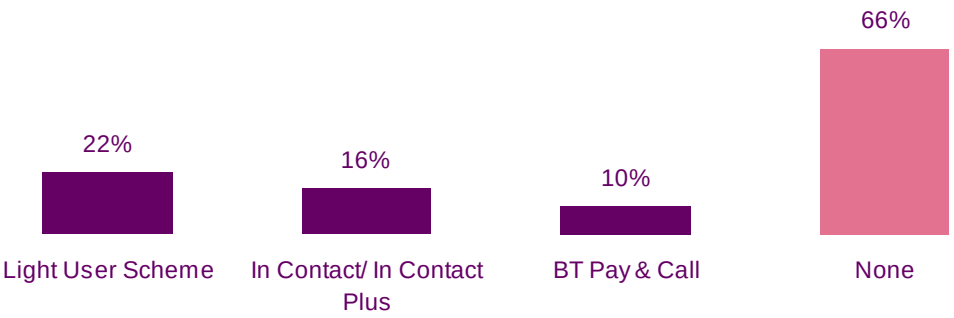


D.2.16 The relatively low awareness levels of LUS and In Contact are a significant weakness of these schemes – if consumers aren't aware of these options they can't benefit from them.

D.2.17 The problem is perhaps compounded by indications from a mystery shopping exercise that suggest that more often than not the schemes are not actively promoted to consumers who have affordability difficulties and who call BT asking for advice on how to save money on their phone bill. On two-thirds (66 per cent) of occasions no scheme was mentioned to callers who explained that they were having difficulty affording their bill or explained that they had had a change of financial circumstance that meant they may have affordability difficulties in the future.

Figure D.8 – Spontaneous mentions of schemes by BT customer service advisors on 150 customer contact number in response to phone bill affordability scenario

Base: LUS: Calls to BT 150 number, May-July 2004, (Base: 50*)



*Treat as indicative due to small sample size

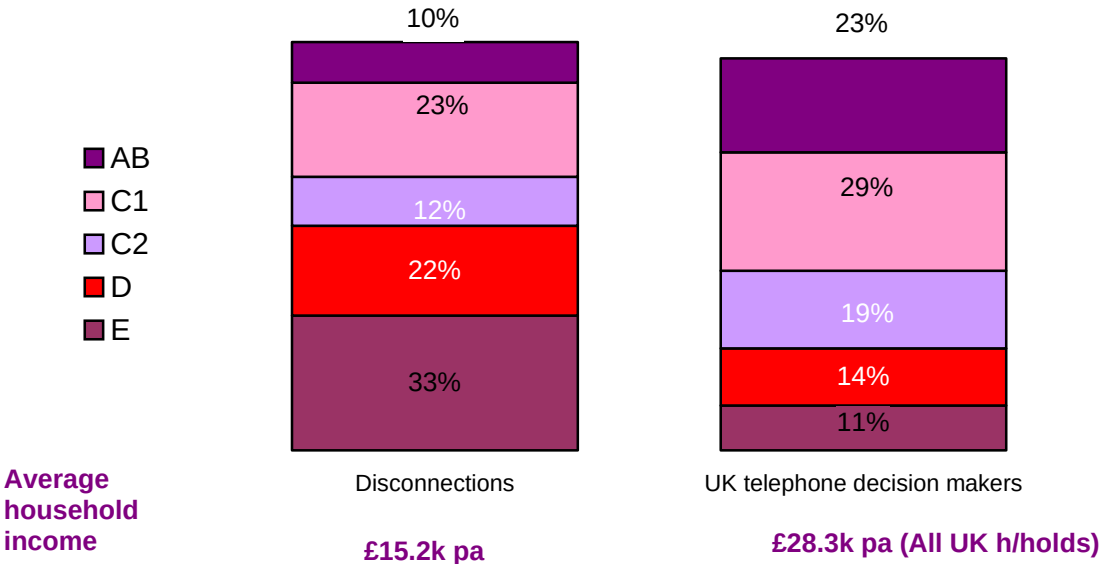
D.2.18 When prompted about LUS and IC in almost all cases the BT customer service representatives were able to confirm that the scheme was available and give some details about them.

Disconnections

D.2.19 BT disconnections for bill payment reasons have been running at around one million per year for several years. This compares to around 15,000 disconnections per year for gas and electricity[7]. This comparison is perhaps unfair, given that most would agree that gas and electricity are more essential services than telephony and consumers have a similar alternative to fixed-line phones in the form of the mobile phone. However this research aimed to offer some explanations as to why the number of disconnections is so comparably high.

D.2.20 Those that were disconnected were more likely than average to be in DE social groups and lower income households – they also tended to be younger than average.

Figure D.9 - Socio economic and income profile of disconnected customers
Base: BT customers disconnected for bill payment reasons from April 2003 to March 2004, May/June 2004, (Base: 255)



D.2.21 The average quarterly bill prior to disconnection was £110, with one in ten (nine per cent) spending over £200 per quarter.

D.2.22 92 per cent of disconnected households had a mobile phone – this is higher than the UK average.

D.2.23 Half of those who had been disconnected have since re-connected to a telephone service, either with BT or a cable operator and two-thirds of these paid a fee to reconnect.

D.2.24 In relation to the one million disconnections, 500,000 do not currently have a fixed line phone at home – but the vast majority (91 per cent) of these do have a mobile phone at home. Of the one million disconnections in the last year 45,000 do not currently have any telephone service at home. These

[7] Ofgem

45,000 are almost entirely social grade E, and from low income (under £9.5k pa) households.

D.2.25 Half of those disconnected in the last year, have since reconnected and almost one in three (28 per cent) of those disconnected in the past year had previously been disconnected (and some of these on more than one occasion). This suggests that the annual disconnections figure is buoyed by a group of consumers who are repeat disconnections, some of whom may be disconnecting and reconnecting several times.

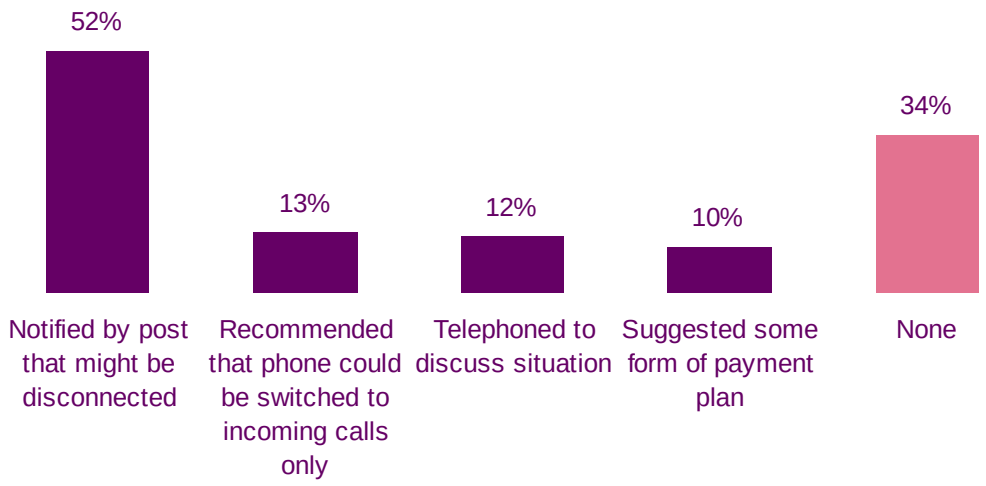
D.2.26 Consumers that have been disconnected more than once are heavily biased toward the DE social groups, with 42 per cent being social group E (i.e. entirely dependent on the state).

The disconnection process

D.2.27 The main reasons consumers gave for having their phone disconnected were not being able to afford the bill (56 per cent), somebody in the house running up high costs (19 per cent), other people in the house not contributing to bill payment (13 per cent), deciding to use a mobile for all calls (10 per cent). Other reasons mentioned included forgetting to pay the bill, claims that the bill contained calls not made, BT being too expensive and not receiving the bill.

D.2.28 As part of the disconnections code of practice BT are obliged to make various contacts with customers who are vulnerable to disconnection before the disconnection takes place. Figure 10 shows proportions that remember various contacts from BT prior to disconnection. Significant proportions do not recall any contact from BT – this is not to say that contacts have not been taking place, as the nature of this data collection is such that it relies on respondents' memories. However it does appear that the impact of these contacts is not having the desired effect.

Figure D.10 – Recollections of contacts from BT prior to disconnection (prompted)
Base: BT customers disconnected for bill payment reasons from April 2003 to March 2004, May/June 2004, (Base: 255)



D.2.29 Consistent with recollection levels of BT contact, almost half (46 per cent) of disconnected customers disagreed that they were given adequate opportunities by BT to and a similar proportion (44 per cent) felt that BT were unfair in the handling the disconnection.

Impact of disconnection

D.2.30 Significant proportions of those who were disconnected claimed that this caused them a lot of (37 per cent), or a few (36 per cent), difficulties. Groups that were most likely to have experienced a lot of difficulties after disconnection were higher spenders, those without a mobile in the house, older consumers (aged 45+) and the unemployed.

D.2.31 Difficulties caused by disconnections included lack of social contact, not being able to make emergency calls, work related problems, exacerbating some sort of personal crisis, loss of phone that was needed for continual health reasons.

D.2.32 After being disconnected the majority (72 per cent) relied on a mobile phone for making calls, three in ten relied on a public PCB and other methods such as using a friend's phone or using the phone at work were used by smaller proportions. Four per cent of disconnected customers managed without making calls at all.

D.2.33 Similarly the mobile phone was the main method relied on for receiving calls (81 per cent), seven per cent used a public PCB and seven per cent just managed without receiving calls.

Would LUS, IC, or other payment schemes have helped?

D.2.34 Prior to disconnection a quarter (24 per cent) used some sort of scheme to help control or reduce costs (BT Payment card, IC, payment plans, LUS, direct debit plans, Call levels, Call barring). Two-thirds said that they had not been offered any type of scheme to help them manage their bill payments. Amongst those that had not taken up any of these schemes prior to disconnection the primary reason given for not having done so was not being aware of their existence – mentioned by 79 per cent.

D.2.35 Over half (54 per cent) said that some sort of pre-pay scheme would have helped them to avoid disconnection. So again, similarly to the research conducted amongst LUS and IC users, low awareness of pre pay schemes such as IC seems to disadvantage some consumers.

D3: Public Call Boxes

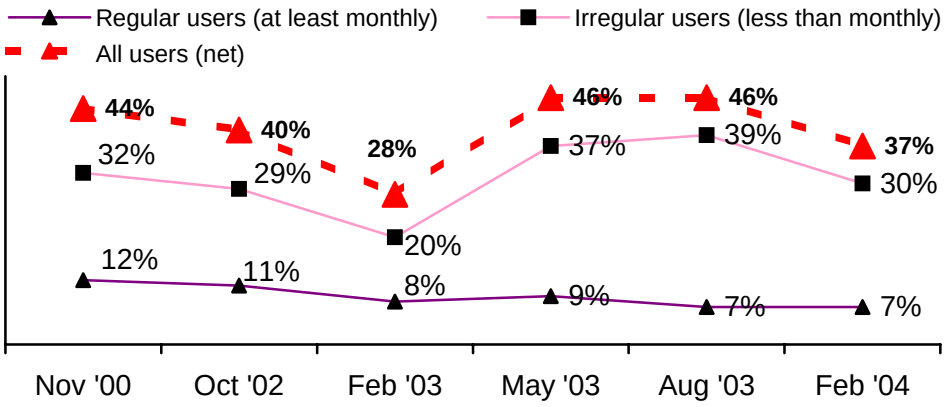
Public Call Box use

D.3.1 Overall, Public Call Box (PCB) use is in decline. Ofcom's February 2004 survey found that 37 per cent of adults claim to at least occasionally use a PCB – this is a significant decrease from 46 per cent six months previously.

D.3.2 However, the proportion of regular PCB users (who use PCBs at least once a month) has remained stable since Feb 2003, standing at seven per cent - although there has been a steady fall in regular users over the last three years.

D.3.3 The groups that use PCBs most frequently include younger consumers, DE social groups, lower income groups, and unsurprisingly, those with a mobile phone only or those without a fixed or mobile phone.

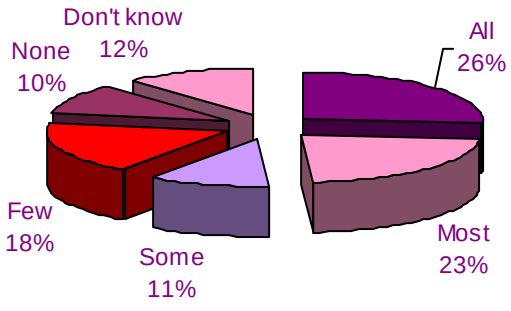
Figure D.11: Frequency of PCB use
Base: UK residential consumers aged 15+, Feb 2004, (Base: 2131)



Types of calls made from PCBs

D.3.4 Short calls are prevalent - half (49 per cent) of PCB users only spend the 30p minimum charge for either all or most of the calls they make on PCBs. Findings are similar among those that use PCBs frequently.

Figure D.12: Approximate amount of PCB calls that only the minimum charge of 20p is spent
Base: All adults who use PCBs, Feb 2004 (Base: 771)

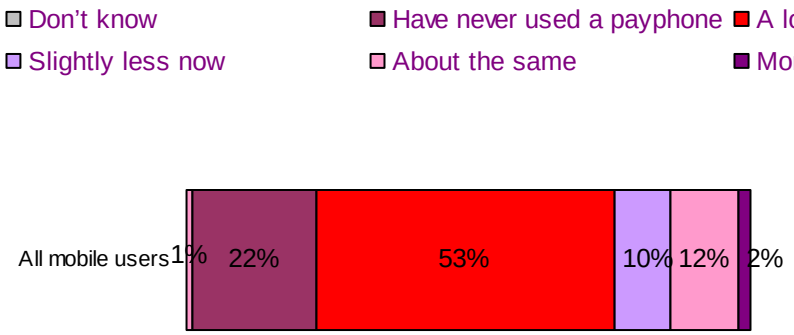


D.3.5 Local calls are by far the most popular call type, with 87 per cent of frequent PCB users making these calls at least monthly, 45 per cent make calls to mobiles at least once a month and a quarter (27 per cent) make national calls at least monthly.

The Impact of mobile phones on PCB use

D.3.6 Three-quarters (76 per cent) of adults now personally use a mobile phone – the majority of these claim to use PCBs less frequently compared with before they had a mobile phone, this was especially true among those under 55.

Figure D.13: Use of PCBs compared with before the user had a mobile phone
Base: Mobile users aged 15+, Feb 2004, (Base: 1553)



D.3.7 So, for the majority of those who have a mobile phone, frequency of PCB use has declined since obtaining a mobile phone – this is consistent with the fall in the number of regular PCB users over the last four years (figure [1])

Awareness of cost of using PCBs[8]

D.3.8 Seven in ten adults who use PCBs were correct in thinking that the minimum charge for using a PCB was 20 pence. One in five (18 per cent) thought that the cost was either higher or lower than the actual cost and one in ten (12 per cent) said that they did not know what the cost was.

D.3.9 Younger, more frequent users and those without a fixed line at home were among those most likely to correctly think that the minimum charge for using a PCB was 20 pence.

D.3.10 Whilst the majority of PCB users are aware of the minimum charge for using a PCB, only a small minority (one per cent) knew that the cost does not differ according to the time of day or type of call and were able to correctly identify that 20 pence gives one to two minutes of credit (actually 110 seconds).

[8] The minimum charge for making a call from a BT PCB increased to 30p (from 20p) in May 2004 – the quantitative research pre-dates this change.

D.3.11 There is a general tendency among many PCB users to overestimate the amount of time that 20 pence will give on a local call, and underestimate the time allowed on a national call.

How far are consumers prepared to walk to the nearest PCB?

D.3.12 To help better understand what a reasonable distance is between PCBs, respondents were asked how far (in terms of time) they would be prepared to walk to the next PCB, if the one they wanted to use was not available.

D.3.13 In total around half of PCB users would either not be prepared to walk 10 minutes to the next PCB (43 per cent), or would not attempt to find another PCB at all (six per cent) if the PCB they wanted to use was unavailable.[9]

D.3.14 A further five per cent said that it would depend on circumstance therefore they either may or may not be prepared to find another PCB.

D.3.15 Findings were similar to Ofcom's qualitative research on this topic, where generally speaking, 5 minutes' walk was considered reasonable in urban areas and 20-30 minutes' walk in rural areas

D.3.16 Perhaps unsurprisingly, there was evidence of an urban/rural split in terms of consumers' expectations of how far is reasonable to find a PCB. Generally speaking, a maximum five minutes' walk was deemed reasonable in urban areas, and 20-30 minutes' walk in rural areas.

D.3.17 Factors that respondents considered important in deciding what is 'reasonable' included; the terrain – whether hilly or flat, the age profile of the local population – for instance young children or elderly people, the circumstances – whether at night; in an emergency situation, etc.

Value of PCBs to citizens

D.3.18 Ofcom commissioned some qualitative research to understand better the citizen-consumer's view of the value of PCBs. The key findings from these focus groups are summarised below.

Impact of PCBs on consumers' lives

D.3.19 Regardless of their level of call box usage, many respondents placed great value on having the option to use a PCB. Regular call box users often owned mobile phones; however these were seldom used to make out-going calls. Rather they were viewed as a means to be contacted. Regular call box users were less likely to have a landline – usually the result of financial considerations. As a result, call boxes were used for a variety of different calls – both social calls and essential calls (to job centres, etc.)

[9] Caution should be applied to these findings, as there is no guarantee that consumers would actually find another PCB within this time. Therefore, the results are perhaps a better indication of the proportion that would not walk 10 minutes or indeed any distance at all to use another PCB.

D.3.20 Irregular call box users tended to own landlines and mobile phones, which were used both to make and receive calls. For many people call boxes were used as a last resort, on an irregular, ad hoc basis – for instance, when their landline is broken; or when their mobile is flat/has no reception/has run out of credit. Some irregular users appear to make a conscious choice to use a PCB in certain circumstances – for instance when socialising, to avoid the risk of their mobile being lost/stolen.

D.3.21 Regardless of their level of call box usage, many respondents placed great value on having the option to use a PCB. PCBs were considered to have a number of benefits compared with mobiles and landlines, in particular: cost savings, privacy, security/safety in an 'emergency', being more reliable than a mobile.

Reaction to BT's rationalisation programme

D.3.22 Respondents were supportive of current arrangements, although they called for more pro-active consultation with local residents when a removal is planned.

D.3.23 Respondents were generally supportive of current procedures for removing the last call box from a site; however they made a number of suggestions for enhancements, including: extending and strengthening the 42-day consultation period (e.g. by staging public meetings); making the removal notices in PCBs clear and easy to read; more publicity for proposed removals (e.g. with notices in local papers and maildrops); objections to removal made easier with a freephone number advertised in the PCB; reviewing the power of veto held by local authorities/ parish councils – or at least requiring reasons for objection to be 'reasonable'.

D.3.24 Almost unanimously, respondents were opposed to the use of council tax to subsidise unprofitable call boxes. Central Government or European funding were preferred sources. Respondents urged BT to consider the PCB business as a whole when deciding the fate of individual call boxes. It was felt that overall profitability was more important than the profitability of a particular call box.

D.3.25 Overall, respondents were balanced in their assessment of BT's plans for rationalisation. They looked to Ofcom to ensure that a balance is struck between commercial imperatives and social obligation.

The USO for PCBs: factors to consider

D.3.26 Overall the public safety role of the call box was deemed most important in determining whether or not it should be removed.

D.3.27 Looking at respondents' ratings of how important various factors were when deciding whether or not a PCB should be removed, the most important factors overall were:

- Emergency / public safety role of the call box.
- Whether there is another call box within a reasonable distance.
- The total number of call boxes within a community – i.e. PCB coverage.

D.3.28 Less important criteria were:

- Households with a fixed line – seen to affect a tiny minority of the population.
- Size of the community – absence of a community was considered even more of a reason to retain a call box as in these circumstances there is less opportunity to use a neighbour's telephone.
- Quality of mobile coverage – it is considered important to have the option to use a PCB even where there is mobile reception.

D4: Services for consumers with disabilities

D.4.1 In this annex two pieces of research commissioned by Ofcom which have informed the Universal Service review are briefly summarised. They are the User's Experience of Typetalk asurveynd a mystery shopping exercise. The annex also includes the Executive Summary of a survey of Text Communications conducted by the City University, London.

Research of Users' experience of Typetalk

D.4.2 Ofcom commissioned MORI to conduct research with members of the deaf and hearing impaired communities, in order to develop an understanding of the usage of, attitudes towards, and perceived benefits of textphone services. The aim was to learn about user attitudes to the text relay service and gather views on its marketing as well as on the scope for extending the service. The following section highlights the key findings from this research – the full report can be found here (http://www.ofcom.org.uk/research/consumer_audience_research/telecoms/)

- Typetalk, the name under which the relay service for textphone users operates, is a familiar, convenient and well appreciated service. It remains the quickest way to contact the hearing community and resolve a call in realtime.

- Typetalk preserves the default normality of the telephone for the deaf community. It is however perceived to be outdated and a 'one size fits all' model of provision, behind modern trends towards personalisation and convergence technologies.

- Technical problems affect the usability of the service. There are difficulties when call steering or answer-phones are encountered and operator shortages sometimes lead to calls being cut short or calls to the service unanswered.

- Typetalk conversations are perceived to lack emotional flexibility and spontaneity. Messages can often be long and formal with no opportunity for the deaf person to interrupt. The operator is an unknown quantity, often perceived as distant and mechanical, adding to the formal nature of the call and creating the impression that the emotional layer is absent.

- Service improvements look towards increased user control over the medium and content, which are tied to perceptions of independence and equality with the hearing community.

- Marketing and communications are well received when they value the deaf community as consumers in their own right, illustrating the range of services on offer and the practical benefits. Personalised and bundled services are recurring themes alongside clarity and emotional content.

- Services and marketing strategies are best received when developed with the advice and support of local deaf organisations. Suspicions remain that the hearing community develop solutions for situations as they perceive them, without consulting the deaf users.

- The hearing community may benefit from a campaign to raise awareness of textphone services. Most participants felt that the hearing community are wary of Typetalk calls. A textphone service designed to connect the deaf and hearing communities will be limited if either one is unfamiliar or unable to use it.

- Future service extensions reflect a compromise between an ideal service and practical offerings that work in the real world. The ideal is an organic multi-channel visual and text service that is owned by the deaf community and convergent with other mediums, but not if this involves unproven technology that may lack the convenience and practicality of Typetalk.

- There is no need to replace the Typetalk service but there is strong desire for greater integration and connectivity with other technologies and for service providers to demonstrate that they value the deaf community.

Services offered by communications providers for consumers with disabilities

D.4.3 Ofcom commissioned Continental Research to conduct 145 telephone mystery shops with BT, NTL, Telewest, O2, Orange, T-Mobile and Vodafone during May 2004. Continental Research's mystery shoppers used realistic scenarios to test whether providers' customer services advised customers of the services they actually provide to consumers with disabilities. *The key findings are summarised below.*

Services for blind and visually impaired consumers

- Nearly all providers offered bills/contracts in Braille

- Large print bills were always offered by some providers, but others did not appear to be aware of this service.

- Free directory enquiries services were offered (often spontaneously) to blind or visually impaired consumers by some providers but others did not mention it. Some providers actively offered a through connection service.

- Priority fault repair was offered in most cases, but usually only after prompting.

Services for deaf and hearing impaired consumers

- Text relay services were offered in most cases to deaf and hearing impaired consumers by two of the fixed line providers – usually without prompting. The other operator offered the service about half of the time. The associated special tariff was only offered in about a quarter of cases.

Services for consumers with cognitive difficulties/ long-term hospital patients

- A service where a nominated third party can manage billing and contracts for consumers with cognitive difficulties or in long-term hospital care.

- Safeguard services were offered by one provider in most cases and by a further two providers sometimes. In only one instance were such services offered without a prompt.

Research of Text Communication: Executive Summary of Survey

Aim of survey

1 The aim of the research – commissioned by BT, Orange, O2, Vodafone, Oftel, DIEL and the Telecommunications Action Group and conducted by the City University, London – was to find out the text communication uses and preferences of people who cannot or prefer not to use voice telephones, and the limitations in present services so that these can be improved.

Key Findings

2 Apart from letter-writing, the most commonly used forms of text communication for personal use were email and SMS (text messaging). 74 per cent used email and 65 per cent used SMS (text messaging) while just over half (53per cent) used textphones.

- Over half of respondents who used email or SMS (text messaging) did this daily, and while most people write letters at some time, very few people do this daily.
- Asked *If you could have only one form of text communication what would it be?* 35 per cent said SMS, 32 per cent email and 12 per cent textphone.
- Women and older people made less use of alternatives to voice telephones than men and younger people and so must be considered at some disadvantage.
- While a half or more of people aged 70+ did use email or textphones, there was a small group of severely or profoundly deaf people in their late fifties upwards whose only means of text communication was letter-writing. Several indicated that they would like to use other means, but lacked the information to do so.
- Almost three-quarters (73 per cent) of the sample had Internet access at home compared to 48 per cent nationally in the third quarter of 2003, according to the National Statistics Omnibus survey (ONS, 2003). This is particularly high when the age composition of the sample is considered, Internet usage generally declined with age, suggesting that people who cannot or prefer not to use voice telephony have higher access than the general population.
- Three-quarters (76 per cent) of those who used SMS (text messaging) did so more often than a year ago, as did two-thirds of those using email, and over half (58 per cent) of those using Instant Messaging. Use of faxing and letter-writing declined over this period.
- Generally respondents preferred methods of text communication available to all and not specifically targeted at those with a disability.

Research of Text Communication: Executive Summary of Survey

Methods of recruitment of sample

3 In order to include people in different age groups, who became deaf or hard of hearing at different ages and with different communication preferences, an extensive publicity and mailing was carried out between September and December 2003. This included press releases to deaf organisations and the general press, (both print press and electronic), mailings through deaf organisations, and to deaf schools and hearing impaired units in mainstream schools, audiology clinics, social services hearing impairment teams, and deaf clubs. It was also hoped to include people with severe speech or language impairments which would make use of voice telephony difficult and an article was written in the journal of a national charity supporting people with aphasia, and all regional centres of the Stroke Association were informed of the survey.

The questionnaire

4 A questionnaire was designed after extensive consultation with deaf organisations, including a focus group of deaf people. It was piloted, and circulated for comment to deaf people, the project Steering Group, and experts in text communication. It was offered as an ordinary or large print size postal questionnaire, an email or Braille questionnaire, and an interview in BSL was also available on request.

The sample

5 The report is based on 381 completed and usable questionnaires. Respondents covered a wide age range, from 15 (the starting age of the survey) to 91; 45 per cent were aged 60 or over; over 40 per cent of respondents considered themselves to be profoundly deaf, and another 20 per cent could hear sounds but not understand words. Severely and profoundly deaf people aged 60 or over were considerably under-represented. Hearing impairment had started for almost a third of the sample before the age of three, and for 21 per cent from the age of 50 onwards. Female respondents (62 per cent) outnumbered males (38 per cent). Twenty-two per cent of respondents gave BSL/SSE as among their preferred methods of communication. The sample slightly under-represented people from minority ethnic groups in the population (6.6 per cent compared with 7.9 per cent). Forty per cent of respondents were retired, 33 per cent were in employment, 9 per cent were economically inactive because of illness or disability and 13 per cent were full-time students (a high proportion due to a high response rate from deaf schools and hearing impaired units).

Detailed Findings

SMS (text messaging)

6 Respondents were asked to indicate their agreement or disagreement with a number of positive and negative statements about each method of text communication. There was generally agreement with all the positive statements about SMS (text messaging), 90 or a higher percentage agreeing that SMS was: *'good because you don't need special equipment for deaf*

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people'; 'easy'; *'good because you can use it anywhere'*. There was also agreement with most of the negative statements about SMS (text messaging), although it was less emphatic, with two-thirds to almost a half agreeing that ' only being able to send short messages; *'not being able to have a "live" conversation'* , *'delay in receiving messages'*, and *'costs being too much to send many text messages'* were problems. However, over half disagreed with the statement that it was a problem that the text was small and three-quarters that: *'I only use SMS (text messaging) when I'm on the move'*.

7 Respondents were also asked, in open-ended questions, to state what they most liked, disliked and what would most improve each form of text communication, responses likely to indicate issues uppermost in their minds. Being 'easy', 'portable' and 'fast' were the most common likes for SMS (text messaging), while inputting problems headed the list of dislikes and of suggestions for improving this. Other main dislikes were cost, and not knowing whether a message had been received.

8 Respondents who did not use each form of text messaging were asked the reason for this. Over 40 per cent gave not having a mobile as a reason, followed by *'not knowing how'* and it being *'too fiddly'*. Several people commented that they did not know how to choose a mobile.

Email

9 There was again agreement with all the positive statements about emails: 'good because you don't need special equipment for deaf people'; and 'easy to use', having almost unanimous agreement. Other statements, that emails are: 'cheap'; 'good because you can change print size and colour'; and 'you get a quick reply' received agreement from over four-fifths to over half of the respondents. There was also support for the negative statements about emailing, particularly that not everyone has a way of receiving emails, and not being able to have a "live" conversation and *'you can get too many emails'* endorsement varying from almost nine-tenths to just under two-thirds. Somewhat surprisingly, agreement with the statement about emails being good because you can change print size and colour decreased with age. Its usefulness is likely to increase with age as sight problems increase, and this suggests a lack of detailed knowledge of computing in older age groups.

10 As with SMS (text messaging) the chief spontaneous reason for liking emails was that they were 'easy'. 'Fast' was also in the top three for 'likes', with cheap, unlike for SMS, being in the top three but some way behind. Aspects not currently possible with SMS, unlimited text length and being able to send attachments, were quite often mentioned as 'likes'. Spam, technical/ computing problems, and, as with SMS, not knowing whether a message had been received were the most common dislikes. Improvements most wanted were for these same aspects. Not having a computer/Internet access was a more important reason for not using, given by almost two-thirds of non-users, than not having a mobile, which is unsurprising given the difference in cost.

Faxing

11 As with SMS and emailing, there was high agreement with the statement that faxing is 'easy', and also with the statement that *'faxes are good because you*

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don't need special equipment for deaf people', although the endorsement in the latter case was not quite as high as for SMS and email. There was also high agreement with the statement that *'faxes are good for long messages'*. A majority of respondents endorsed the negative statements about faxing: not being able to have a "live" conversation; companies not always responding to faxes and frustrations with transmission because of problems at the receiver's end, with greatest agreement by around three-quarters for 'not many of my friends of family have faxes'. Being 'fast' was the top 'liking' in this case, with 'easy' not far behind, and being able to keep a copy/send diagrams coming next. The main dislike was transmission difficulties. Among the reasons for not faxing, not having a fax was of fairly similar order to not having a computer/Internet access, but 'others not having a fax' was in this case also a prominent reason.

Textphones

12 There was again high agreement with the positive statements about textphones: *it's a good way of communicating with deaf people'; 'you can have a "live" conversation* and *it makes you independent*. Strikingly the most emphatic agreement with a negative statement was for companies/ organisations often don't know how to use a textphone', 92 per cent agreeing with this. The other negative statements had endorsement from almost two-thirds to a half of respondents: '*not being able to get messages from mobiles*; *having to wait till the other person finishes typing*; *not always being able to tell if a textphone is working*; *only one or two lines of text being displayed*' One negative statement, that the visual display is not very clear, was disagreed with by the majority of respondents. Textphones were used most by those in the 30-49 age group (by 70 per cent), little by 15-18 year-olds, and by half or slightly more in the other age groups.

13 An important difference from the other means of text communication considered so far was that 'easy' was a much less prominent reason for liking this service. The major 'likes' spontaneously mentioned were 'independence' and the ability to have "live" conversations, the latter of course not being possible with these other forms. Dislikes were diverse, but included operating failures and difficulties, the difficulties and arduousness involved in typing, and the length of time this took, problems with companies receiving textphone calls, and problems with RNID Typetalk. Suggested improvements were also diverse, but better display/print and awareness amongst organisations and the public about textphones and how to use them were common.

14 Respondents who used Typetalk were asked to indicate the extent of their agreement with statements about this. There was high agreement with all the positive statements. Views were more mixed about the negative statements, with over half agreeing with the statement '*Companies often won't accept Typetalk calls'*, but over a quarter not being sure about this. There were also mixed views about the statement '*It's annoying that another person has to be involved'*, with around two-fifths agreeing with the statement and a similar proportion not agreeing. Discontent with these two aspects of Typetalk decreased with age. There were many suggestions for improvement, including fewer connection failures, but the greatest need was for increased public awareness of Typetalk so that hearing people could accept calls more

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readily, and with greater understanding.

15 As with faxing, others not having a textphone was a common reason given for not having one. 'No need' was a more prominent reason than for non-use of SMS, email or fax. The proportions giving these reasons decreased with increased hearing impairment.

Instant Messaging

16 While Instant Messaging was used by only a relatively small proportion of the sample, those who used it were generally enthusiastic about it. Statements that it was 'easy', and '*Good because you can have a "live" conversation'* had over 90 per cent agreement, with lower agreement, but from around four-fifths to three-quarters, for the statements that it was '*Good because you can have a conversation with more than one person at the same time* , *Cheap*, and *Good because you can change print size and colour*. Negative statements that it was a problem: '*You can only message with people who have the same provider'* and '*Not knowing whether people were online'* were agreed with by two-thirds or slightly less. These were also the two improvements most wanted. The most frequent 'like' was that "live" conversation was possible, followed by the two most common 'likes' for other forms of text communication ie that it was 'easy' and 'fast'.

17 There was a great lack of knowledge about Instant Messaging among the sample, with 'don't know how/ don't understand' being given as a reason for non-use in almost two-thirds of cases, almost twice as many as gave this reason for any other form of text communication. However, many respondents expressed a wish for greater knowledge.

Letter-writing

18 Respondents were also asked, in open-ended questions, what they most liked and disliked about letter-writing. By far the most common liking, given by over half of respondents, was that it allowed the personal touch and expression of feelings. Dislikes were more diverse, with time taken – to write a letter, to get or receive a letter, or unspecified time factors – being most commonly given. Respondents were also asked a question not asked for other forms of text communication – *in what circumstances they would write a letter rather than use another form of text communication*? The most common reply, by around two- fifths of the sample in each case, were for formal, important, business situations, and for personal ones between friends. About one fifth gave communicating with people who did not have technical text communications, and a similar proportion gave the reasons: special occasions, both joyful and misfortunes, as circumstances in which they would write a letter.

Text communication at work

19 Fax use was much higher at work than at home, email somewhat higher and textphone slightly higher. Use of SMS was similar in the two situations. Instant messaging was used less at work than for personal use.

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Access to Work

20 Just over half of respondents currently in paid work had obtained equipment through Access to Work (a government-run scheme to provide extra support and resources enabling disabled people to compete in the workplace on an equal basis). A third of these respondents said that they had had problems with this. These fell into three main categories: delay; lack of awareness of the needs of deaf people; and attitudes of Access to Work staff. Nevertheless two-thirds said that they had no problems, so experiences were mixed.

General views of text communication

21 Respondents were given the opportunity at the end of the questionnaire to add any comments about text communication, and a number did so. Comments can very broadly be grouped into the following themes:

- expressions of gratitude that electronic text communication was possible nowadays;
- a few calls for more technical development;
- suggestions that text communication was too expensive and/or it should be available more cheaply for deaf people; and, by far the most commonly
- there should be better information about the forms of text communication and facilities available, and guidance (and perhaps training) on how to use these.

Conclusions

22 It appears that what people like most about different forms of text communication is that they appear to them to be ‘easy’, ‘fast’ and – preferably also ‘cheap’. Nevertheless, when they are familiar with a form of text communication, and it is widely used among friends and acquaintances, they are willing to put up with a number of problems in its use. The specific facilities available with particular forms of text communication are appreciated but lack of a facility does not prevent its use. It is also an important finding that respondents did not always seem aware of facilities and product features that could be useful to them, such as changing colour or print size on emails for people with visual as well as hearing impairments. A number of respondents pointed out that information on which products and services are available, and how to use them, was needed through channels that they use, such as deaf magazines. This could be particularly important for older people, whose hearing loss starts in later life, and who constitute the largest group in need of alternatives to voice telephony. The perception of high cost is also an important factor holding back many people from using various forms of text communication. This will be an issue not only for many older people, but also for deaf people of working age. Evidence from the RNID (2003) indicates that they are more likely to be on low incomes than the general population, leading to greater price sensitivity.

D5: Methodology details

D.5.1 The table below shows details of the research surveys and projects Ofcom commissioned as part of its Universal Service Review.

Table D.1

Research	Date	Research agency	Methodology	Sample definition	Sample size
LUS users	May – June 2004	Continental	Telephone survey	LUS users from BT database	200
IC users	May – June 2004	Continental	Telephone survey	IC users from BT database	203
Former LUS users	May – June 2004	Continental	Telephone survey	Former LUS users – ceased using between April 2003 and March 2004	200
Former IC users	May – June 2004	Continental	Telephone survey	Former IC users – ceased using between April 03 and March 2004	200
Disconnections	May – June 2004	Continental	Postal survey	BT customers disconnected for bill payment reasons, April 2003 – March 2004	255
Affordability scheme promotion	May-July 2004	Continental	Telephone mystery shop	Calls to BT 150	50
£3,400 rule survey	May – June 2004	Continental	Telephone interviews	BT customers that paid extra for phone connection, April 2003 – March 2004	12
Narrowband data rates	May 2004	Continental/ TNS	Face to face omnibus	TNS consumer omnibus	2228
PCB Quantitative	Feb 2004	MORI	Face to face survey	UK adults aged 15+	2131
PCB Qualitative	Feb 2004	ORC	Deliberative focus groups	PCB users/ 'general public'	4 groups; 43 respondents
Disability services	May-June 2004	Continental	Telephone mystery shop	Phone calls to communications providers	145
Typetalk users	June 2004	MORI	Focus groups and depth interviews	Typetalk users	5 depths/ focus; 14 respondents

Annex E

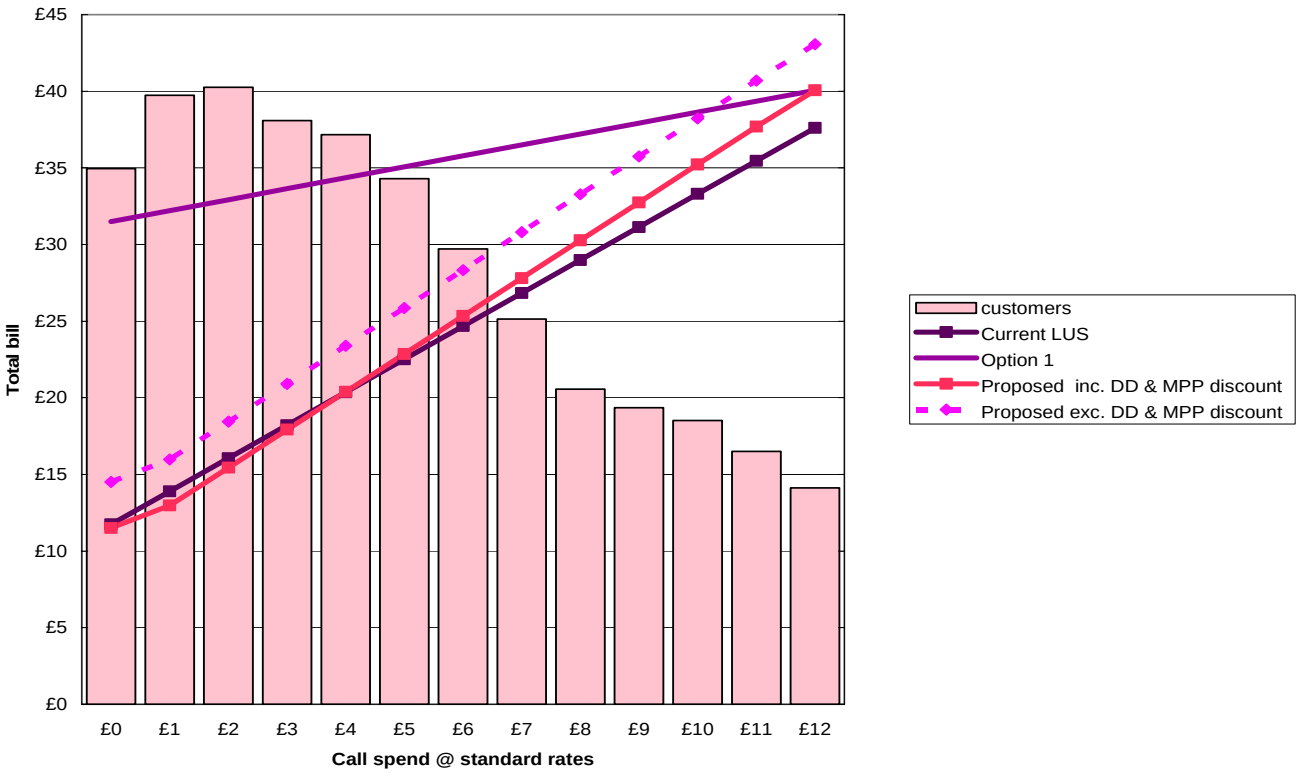
Special Tariff Schemes

E.1 Section 4 (paragraphs 4.15 to 4.22) explains that Ofcom invited BT to develop proposals for a new special tariff scheme targeted at customers on low incomes. The main features of BT's proposed Scheme are: eligibility linked to low household income and receipt of benefits; an inclusive call allowance of £1; national and local call charges at 10p per minute; and extra savings for use of Direct Debit (DD) and Monthly Payment Plans (MPP).

E.2 The chart below provides a comparison between BT's proposed new scheme, with and without the DD/MPP discount, the existing Light User Scheme and BT's Option 1 tariff with the DD/MPP discount. The chart also shows the current spending pattern of LUS customers to provide an indication of how they might be affected by the change, based on their current spending patterns.

E.3 The chart shows that the majority of existing LUS customers would either be better off, or broadly in the same position, if they paid by DD/MPP (assuming that they are eligible for the scheme and maintain a similar calling pattern). All customers not paying by DD/MPP would be worse off (on the same assumptions).

Figure E.1 Comparison of proposed new scheme with existing BT tariffs



Source: BT/Ofcom

BT Pay & Call

E.4 The pre-pay product Pay & Call is referred to in paragraph 4.35. BT introduced the Pay&Call product to target mainly customers who have difficulty controlling their spending or who are paying off an outstanding debt to BT. Pay & Call is a commercial product, that is not required as part of the USO. It can be used with BT's main commercial residential tariff packages. The following services are unavailable:

- BT Working Together
- Broadband
- Business Lines
- Call Forwarding
- Friends & Family Gold
- Home Highway
- ISDN and ISDN2
- Light User Scheme
- Ring Back When Free
- Surftalk

E.5 Customers have their own BT Pay&Call "moneybox" into which they can pay money at any time. When they make a call, the cost of the call is automatically deducted from the moneybox. The rental is also paid through the moneybox at the intervals agreed when joining Pay&Call – weekly, fortnightly, monthly or quarterly. So the amount of money in the moneybox will periodically go down, even if the customer is not making any calls.

E.6 The moneybox can be topped up to a maximum of £500 using three payment methods: BT Pay&Call Payment Card, Debit Card and Direct Debit. BT's Pay&Call Payment Card can be used at any of the 10k PayPoint outlets to pay cash into the moneybox.

E.7 BT Pay&Call automatically warns the customer when the amount of money in the moneybox has fallen to £2 or less by playing a message when a chargeable call is made. Customers can also set the service to tell them how much is left in the account every time they make a call.

E.8 When the moneybox is empty the customer cannot make outgoing calls (except to 0800 numbers, 999 and 112) but will still be able to receive incoming calls. However, if the customer does not top up the moneybox and a periodic rental payment or debt repayment is due, this then pushes the moneybox into the red. The customer then has 21 days to top up the moneybox (back to at least £0.00). If the customer does not top up the moneybox within 21 days, they will no longer be able to receive incoming calls and BT will add an Administration Fee to the debt.

E.9 As of 2 December 2004, BT had 57,257 customers registered on Pay&Call of which 49,487 are actively using the service. BT has recently increased promotion of BT Pay&Call to those customers facing disconnection or with a propensity of running up bad debt, as a result customer numbers have increased by around 3000 per week.

Light User Scheme (LUS)

E.10 Section 4 refers to the LUS. The current tariffs are:

Rental:	For quarterly call bills at or below £10.90, the rebate is 11.56 pence for every 10 pence that call charges fall below £16.75. Where the quarterly call bill is above £10.90, but at or below £15.07, the rebate is be £6.77. Where the quarterly call bill is above £15.07 there will be no rebate for that quarter. (Figures exclude VAT)
Calls	National daytime - 7.9p per min National evening - 3.95p per min National weekend - 1.95p per min Local daytime - 3.95p per min Local evening and weekend - 1p per min.

InContact (also know as InContact Plus)

E.11 Customers joining *InContact* pay a joining fee of £9.99. For a quarterly line rental of £9.25, customers of *InContact* are able to receive all incoming calls. The following outgoing calls can be made as normal; emergency services (999, 112), BT operator services (150, 151) and BT's Ring MeFree service (12822), Textphone access for 150/151 (0800 243 123), 999 (0800 112 999), freephone numbers (excluding indirect access).

E.12 In addition, calls can be made using a prepaid card, BT In Contact Cards are available from PayPoint outlets (there are over nine thousand nationally in newsagents, convenience stores and petrol stations). Once purchased the In Contact Card can be kept and topped up as required with a minimum value of £5 to a maximum value of £25 per transaction. The card value (including any top-ups) must be used within six months or it will be forfeited. Calls are charged at 10p per unit.

E.13 To make a call using Phonecard Plus from an *InContact* line, the code 14257 must first be dialled. The service then asks for the account number on the back of the card, and then the full telephone number required.

E.14 *InContact* is available only on single residential exchange lines and not on lines connected to payphones or those used exclusively in connection with a burglar alarm or other monitoring service. It cannot be used as an additional line in households with telephone service from another source, including mobile. Itemised statements and bills are not available.

Annex F

Public Call Boxes

F.1 Section 5 of the consultation identifies three approaches to the regulation of public call boxes (PCBs) in the UK, concluding that the current arrangements should be retained but modified to ensure they are more transparent, accountable and consistent. This annex provides additional clarification of the issues identified in the consultation and taken into account by Ofcom in coming to that conclusion.

What is a payphone?

F.2 Section 5 (paragraph 5.1) indicates that there are different types of payphones in the UK. These form two main categories:

- Public pay telephones, which include managed payphones and public call boxes (PCBs), for example payphones situated on private land such as railways and airports and payphones situated on public land; and
- Private rented payphones, for example payphones operated by individuals such as publicans or landlords of rented accommodation.

F.3 The Universal Service Order defines “Public pay telephone” to mean a telephone available to the general public, for the use of which the means of payment may include coins and/or credit/debit cards and/or pre-payment cards, including cards for use with dialling codes. It further distinguishes PCBs as a subset of public payphones. “Public call box” is defined in the USO conditions as a public pay telephone which is permanently installed on public land and to which the public has access at all times.

Profitability

F.4 BT Payphones is a cash positive and profitable business. BT’s regulatory Financial Statements 2004 show that BT Payphones’ turnover was £176 million per annum and achieved a return of £60 million (for the previous year turnover was £190 million and the return £63 million). Nevertheless, BT’s revenues from payphones have been falling – by around 40 per cent between 2000 and 2004. BT argues that this trend is mainly due to increased mobile phone penetration.

F.5 Caution should be applied to these figures, as the transfer charge from BT’s Network Business in respect of the public payphone supplementary call conveyance charge (PPSCC) may under-recover the fully attributed costs of this service by approximately £40 million.

F.6 The PPSCC is an additional charge paid by providers of ‘free to caller’ calls to BT which is passed on to BT Payphones (and other qualifying payphone providers) to contribute to the costs of providing and maintaining public pay telephones.

Impact of changing the definition of site

F.7 The definition of “Site” is crucial as to whether or not BT is required to consult with relevant public bodies before the PCB can be removed. The larger the

Site, the more likely a particular PCB will form part of an existing Site with another PCB and therefore consultation prior to its removal will not be necessary, providing that a single PCB would remain on this site.

F.8 In Section 5 (paragraph 5.24) Ofcom proposed that it is appropriate to review the current 100 metre definition of Site. The possible impact of alternative distances on the number of PCBs that BT could remove without consultation is set out below.

F.9 BT provided Ofcom with a breakdown of the total numbers of PCBs by distance, including the total numbers of these which are unprofitable in its view. That data needs to be interpreted with caution, because the PCB in question may not be the last one on a Site. The data provided does not take into account that if one PCB is removed it will leave another PCB that may not then have another PCB within the distance range ie there is a spatial impact. BT has suggested to Ofcom that if spatial impact were taken into account, the total number of unprofitable PCBs that could be removed without consultation could potentially be half of what is reported.

Figure F.1: Breakdown of unprofitable PCBs by distance

Distance between PCBs (metres)	Cumulative total number of PCBs	Cumulative number of unprofitable PCBs	% of total PCBs which are unprofitable
100	20,193	6,137	30
200	26,020	8,566	33
400	39,871	16,958	43
500	45,844	21,410	47

Obligation on public bodies to provide reasons

F.10 As explained in section 5 (paragraph 5.36) to assist public bodies in carrying out their duties and to promote consistency between bodies, Ofcom is proposing to develop a set of guidelines. Some of the factors which might be considered objectively justifiable and relevant to the public body's decision and which could form the basis of guidelines are set out below.

Proposed factors to be included in the guidelines and rationale

Number of households in the area

F.11 The number of households within 400 metres (approximately five minutes' walk) of a PCB could be considered the catchment area for that PCB. This would not however include any passing traffic or reflect that the PCB might be situated on a main road or busy terminus. Such detail would have to be assessed on a case-by-case basis.

Distance to the nearest alternative public call box

F.12 If there is another PCB within 100 metres of the PCB, the case for removing a PCB would be strengthened. If consumers faced a 400 metres walk (approximately five minutes) to the next PCB, the case for retaining a PCB would be strengthened. The case for retaining a PCB would also be stronger where a consumer faced an 800 metres walk (approximately 10 minutes) to the next PCB.

Housing type

F.13 The nature of the surrounding community within the same postcode as a PCB ie owner occupied, privately rented or council housing, could also be considered.

Incidence of vandalism

F.14 It does not seem reasonable to expect a communications provider to continue to provide PCBs if they are subject to constant vandalism.

Other factors that may be taken into account

F.15 These factors may provide an indication of the importance of the PCB to the local community relative to its cost:

- The profitability of a PCB;
- Annual revenue of a PCB;
- Annual volume of calls from a PCB;
- Annual cost of providing a PCB;
- Annual volume of emergency calls from a PCB; and

F.16 PCBs are likely to be of greater importance to the community, and in particular to non-residents, when there is no or limited mobile phone coverage:

- Mobile phone coverage at the site of a PCB.

A model for an algorithm

F.17 In Section 5 (paragraph 5.34 on), Ofcom considers an approach where the current procedures set out in the Direction would be replaced with a new definition of a universal service PCB by reference to an algorithm or a set of threshold criteria. Defined PCBs would be protected from removal. Other PCBs could be retained or removed at BT's commercial discretion. Further details about the algorithm are set out below.

Methodology

F.18 As set out in the consultation document, Ofcom's preferred approach is to retain the local veto rather than use an algorithm. The following paragraphs, however, outline briefly one potential methodology for developing such an algorithm based on logistic (logit) analysis - a form of regression analysis.

F.19 Regression analysis works by taking a set of variables which may influence another variable which is the subject of concern. The variable to be explained is known as the 'dependent variable' (in this case whether the PCB is to be removed or retained). The variables used to explain it are called 'independent variables' e.g. the number of households in the area or the incidence of vandalism. The output of a regression analysis is a formula of the following basic form:

$$Y = b_0+b_1x_1+b_2x_2+\ldots+b_nx_n$$

where y is the dependent variable, x_1 to x_n represent the values of the independent variables and b_o to b_n are constants – known as coefficients. Logistic analysis is a slightly more complex form of regression analysis and is usually used where the dependent variable is binary i.e. it either takes the value of 0 or 1. In this instance, the value 0 represents retention of a PCB and 1 its removal.

F.20 There are several ways of considering what the coefficients of a logistic regression might mean. The most useful for this purpose is to consider how the chances of removing a PCB will increase depending on, say, how many instances of vandalism are reported or how many new houses are built in an area. In general, if the coefficient is positive (+ve), then the more of that factor added the more likely the PCB is to be removed and if that factor is removed (i.e. higher level of vandalism) then the likelihood that the PCB is retained falls.

Data

F.21 BT provided data to Ofcom on 558 PCBs which had been subject to a review in the previous six months. Of these PCBs, 303 (54 per cent) were removed by BT as a result of that review. The remaining 255 were retained by BT as a result of objections made by public bodies in accordance with the Direction.

F.22 Eighteen sample cases were removed from the data because it was not possible to obtain relevant information, for example information of the number of houses by ownership level. These cases were fairly evenly spread between the two sections ie those PCBs removed and retained by BT. Of the final sample of 540 PCBs, 55 per cent of PCBs were removed and 45 per cent retained by BT.

F.23 Ofcom chose 486 PCBs at random from the sample. The model for the algorithm was created using this sample. Data for a further 54 PCBs (10 per cent of the sample) were retained by Ofcom to test the model.

F.24 Ofcom undertook an analysis to look at how well a range of explanatory variables could explain the decision by BT whether or not to remove a PCB. The explanatory variables chosen were:

- Number of households in the area
- Number of owner-occupied houses in area
- Number of PCBs within 100 metres
- Number of PCBs between 100 metres and 400 metres
- Number of PCBs within 800 metres but not nearer
- Number of vandalism attacks in year

F.25 An algorithm was developed of the form described above which was shown to have an accuracy of around 3 in 4. While this is a good level of accuracy for an algorithm which models a very complex area, Ofcom does not believe this to be sufficient to ensure the retention of all target PCBs. The complexity of the calculation also raises transparency concerns.

Threshold Criteria

F.26 BT has put forward to Ofcom an alternative to the algorithm. It will be open to BT to put forward this evaluation criteria as a future approach as part of its response to the consultation.

Other issues: Alternative funding and requests for new PCBs

F.27 In Section 5 (paragraph 5.51) Ofcom referred to issues around a) the contribution by other bodies to the costs of providing particular PCBs and b) the handling by BT and Kingston of requests for new PCBs. These are considered below.

Alternative funding

F.28 There might be circumstances, under any regulatory regime for the provision of PCBs, where BT or Kingston would be entitled to decline to install a new PCB or to proceed with the removal of a PCB. In these circumstances, local individuals, companies, public bodies or other stakeholders might be prepared to fund from their own budgets the installation costs and/or maintenance costs of a PCB (in full or part) if it meant that BT or Kingston would be able and willing to install or retain a PCB.

F.29 Ofcom is aware of a situation where a council needed to deliver service points within 10 minutes' walk of 85 per cent of its residents as part of its Electronic Service Delivery Public Service Agreement and entered into a Public Private Partnership with BT, deploying multimedia terminals into existing PCBs, providing free access to council services and information.

F.30 Ofcom could not require stakeholders to make funds available in these circumstances nor determine how funds might be made available. Ofcom is aware however that public bodies are entitled to procure services, although there are public procurement rules which act as a safeguard to ensure that goods and services are obtained on a fair basis. Any such arrangement would be a matter for the relevant parties.

Requests for new Public Call Boxes

F.31 Under the Direction, there is a provision for new PCBs. In considering a request for a new PCB, BT and Kingston are required to take into account:

a) The size of the community which is said to require the provision of a new PCB and related call box services;
b) The quality of housing existing in the community; and
c) The distance from an existing Site to the proposed new Site.

F.32 In relation to each of these matters, BT and Kingston must allocate a score to the proposal as appropriate and decide whether or not to grant the request on the basis of the total score.

F.33 There have been no significant requests for new PCBs recently. Given the focus of debate on procedures for removal of PCBs, Ofcom does not propose to review this requirement.

Annex G

Services for customers with disabilities

The Text Relay Service

Brief history

G.1 A national text relay service has existed since 1991. It was jointly developed by BT and RNID (formerly the Royal National Institute for Deaf People) as a communication service for deaf, hard of hearing and speech-impaired people. In 1994 BT was required, by a condition in its operating licence to fund the relay service which is managed by the RNID under the name Typetalk. The funding obligation is also contained in BT's specific Universal Service conditions which were put in place in 2003.

G.2 The most significant change to the relay service since its inception occurred in 2001 with the introduction of a new functionality, BT's TextDirect. This displaced the role of relay operators in setting up calls manually and only brought them into the conversation when translation was required. It also dispensed with the need for users to register in advance, established a short code access to the relay service using the 1800x range of numbers and offered text equivalents for network tones such as 'number unavailable' or 'busy'.

G.3 The introduction of TextDirect had certain unanticipated consequences for the administration of the relay service by transferring some of the intelligence and functionality away from the relay centres into BT's network. This shift has raised concerns about the governance of the relay service which are considered in paragraphs 6.14-6.17 of the consultation.

G.4 Typetalk is based at two call centres in Liverpool which employ about 300 operators. It is a 24/7 operation that handled an average 160,000 calls a month in the first quarter of 2004. About 90 percent of calls are initiated as text calls, the remainder as voice calls. The average call lasts a little over five minutes (310 seconds) of which the text element makes up about 92 per cent. Typing a set of words takes appreciably longer than speaking them, which is significant for how calls using the relay service are charged. Without any need for prior registration the overall number of active users can only be estimated. From Calling Line Identification (CLI) data BT estimates that the number of individual users each month, text and voice, (first quarter 2004) is about 18,000. Over the first 37 weeks of 2004 the relay service was accessed by just under 51,000 separate CLI numbers.

How the relay service is regulated

G.5 The existing regulation of the relay service falls into two parts: obligations laid on BT as the designated USP under the Universal Service designation and the associated Universal Service conditions (these are published at www.ofcom.org.uk/static/archive/oftel/publications/eu_directives/2003/uso.pdf

) and obligations laid on providers of publicly available telephone services (PATS) under condition 15 of the General Conditions of Entitlement (published at www.ofcom.org.ul/static/archive/oftel/publications/eu_directives/2003/cond_final/0703.pdf).

G.6 Under its Universal Service Condition 4, BT is required to provide funds for the operation of a relay service accessible by end-users of any public telephony provider who need to use the service because of their disabilities. BT's funding is capped at £12,368,748 with an allowance for an annual RPI increase. In practice, BT's funding has fallen some way short of the capped amount. In 2003/04 BT's expenditure was £9,003,000

G.7 The Universal Service condition also permits BT to recover from other providers those costs that are directly attributable to their customers' use of the relay service. Already one in ten calls to the relay service originate outside the BT network but this proportion is likely to increase as more providers offer access to the relay service. As a result, these other providers are becoming significant stakeholders of the relay service.

G.8 Under condition 15.3 of the General Conditions all PATS providers are required to offer access to a relay service which has been approved as such by Ofcom. PATS providers include BT itself, other fixed-line providers and mobile providers. Ofcom is closely monitoring the progress of mobile providers towards meeting this condition, which has involved surmounting technical obstacles. Because of the additional time taken by a telephone call that involves text the condition requires providers to offer a compensatory special tariff scheme. For fixed-line calls to geographic numbers made through the relay service, BT's TextDirect platform currently offers a 60 percent rebate on the text component of the call. Most other providers pass on the same discount but there is nothing to prevent providers marketing the relay service by incorporating the discount in innovative service plans.

G.9 Condition 15.4 of the General Conditions of Entitlement requires access to those additional relay service facilities that mimic features associated with conventional calls. The most significant is short code access to emergency, operator and directory enquiry services - all traditionally accessible by three digit numbers. Most vital of these is evidently emergency services which are accessible through the TextDirect gateway using a dedicated 18000 number.

G.10 Operator and directory enquiry services are accessible for text users by prefixing the desired number with 18001 although some providers offer a specific textphone number for operator and customer services, sometimes identified as a minicom number. With the replacement of the single directory enquiries number 192 by six digit numbers (118xxx) the requirement for short code access has been superseded. Ofcom will consider consulting on an amendment to this requirement if the General Condition is modified. Additionally, the condition requires call progress information generally supplied by network tones (eg number busy, number unobtainable) to be provided in text format.

G.11 At present these additional facilities are only available through BT's TextDirect gateway so, although not a formal requirement, in practice the need to comply with condition 15.4 obliges other providers to interconnect with TextDirect. The pivotal role that TextDirect occupies has come about

because of the way the technology underlying the relay service has developed over the last 15 years rather than through any direct regulatory imposition. However, Ofcom would not stand in the way of providers wishing to retain greater end-to-end control over their customers' calls by developing alternative gateways.

Video relay service

G.12 Several stakeholders have pressed for a video relay service to be made available by means of a change to the definition of relay services in the specific conditions. The effect would be that BT would be required to provide funding for a video relay service and all providers subject to the condition would be obliged to offer access to it. The issue is explored in section 6 of the document. Set out below is additional analysis of the potential market for the service and the likely costs.

The market for a video relay service

G.13 Ofcom cannot set or modify a Universal Service condition unless it meets the tests in section 47(2) of the Communications Act 2003, which requires, amongst other criteria, that the condition or modification must be proportionate to what the condition or modification is intended to achieve. Any mandatory obligation to fund a relay service therefore needs to address the question of whether the promised customer advantage outweighs the additional burden imposed on communications providers (and by extension on their customers). On the basis that there are an estimated 50,000 BSL users in the country the question is what proportion of them are likely to use a video relay service and at what cost.

G.14 The RNID estimates that there are "450,000 severely or profoundly deaf people who cannot hear well enough to use a voice telephone" (see www.rnid.org) . This group provides the natural customer base for the existing text relay service which is used by about 18,000 individuals each month.

G.15 Evidence derived from Calling Line Identity (CLI) analysis indicates that the relay service handled calls from just under 51,000 separate telephone numbers in the first 37 weeks of 2004, of which just over 28,000 represented textphone users. Of these 28,000, about two thirds made more than one call to the relay service over the period Although each CLI number does not necessarily correspond to an individual user these figures suggest that it would be reasonable to conclude that about one person in fifteen of those who might be expected to derive benefit from the service actually uses it. If the proportion of users turned out to be similar from the potential customer base for a video relay service – the 50,000 BSL users - we would be projecting a market of the order of 3,000 to 3,500 users. However as a counterweight to this figure it is estimated that about five per cent of the relay service's existing customers are BSL users – this would amount to around 1,500 users.

G.16 Sweden is the only European country where a video relay service is available. The Swedish regulator estimates that in 2003 the service attracted about 200 users from a total of about 12,000 Swedish people whose first language is sign language. This is a proportion of about one in sixty which translated into UK figures would suggest about 800 potential regular users. Incidentally the

Swedish service averaged 74 calls a week in 2003, suggesting the average user made a call about every three weeks.

G.17 A video relay service is provided in the United States on a voluntary basis (ie it is not mandated by the Federal Communications Commission - FCC) by certain telecommunications relay service (TRS) programmes. Figures about the proportion of sign language users are harder to come by but the compensation rates adopted by the FCC for the period July 2004 to June 2005 are based on 147,651,399 projected minutes for the traditional and IP text relay services and 7,982,733 projected minutes for the video relay service (see www.fcc.gov/cgb/dro/trs.html). Even taking into account that a video relay conversation will take significantly less time to convey the same message than a text relay conversation it is suggestive of the level of demand that the video relay conversation minutes amount to about 5.4 per cent of the projected text relay minutes (i.e. [7,982,733 ÷ 147,651,399] x 100).

G.18 None of these calculations are indicative on their own but taken together it is possible to infer that the scale of demand for video relay services is unlikely to exceed a few thousand customers. The highest estimate arising from these projections is 3,500, as detailed in G.15 above.

How much would a video relay service cost?

G.19 The next issue is to estimate the funding requirements for a video relay service. Whilst the possible volume of usage is difficult to assess, there are cost indicators to be drawn from the Swedish and USA experiences.

G.20 In Sweden a service that is accessible from 8.00am to 8.00 pm (but reduces to six hours a day in the summer) costs about two million Swedish Krona a year. At a conversion rate of £1 = 13.33 SEK (as at 20/09/04) this is roughly equivalent to £150,000 a year. This works out very crudely at about £750 per user or £39 per call, annually. By contrast the UK figure, assuming about 30,000 regular text relay users, would be of the order of £300-350 per user.

G.21 In the USA the National Exchange Carrier Association (NECA), which oversees universal fund expenditure, has set a compensation rate for the period July 2004 to June 2005 of $1.349 for text relay and $7.293 per video relay per completed call minute. Although this represents a significant reduction from preceding years ($17,044 July 2002 – June 2003, $7,551 July 2003 – August 2003, $ 8,854 September 2003 – June 2004) it still indicates that funding a video relay service is over five times more expensive than a text relay, on a per minute basis.

G.22 As the scope of Universal Service excludes funding for high-speed data connections and terminal equipment by USPs the primary funding cost of a video relay service will be the relay element, that is the translation from BSL to voice and vice versa. This is borne out by the experience of the existing text relay service where BT's figures show that about 70 per cent of its funding is attributable to labour costs.

G.23 The factor associated with BSL interpretation is that, as noted in paragraph 6.10 of the consultation, there are only about 200 qualified interpreters in the country. Although it has been argued that a video relay service may enable

their skills to be used more widely the recruitment and deployment of BSL interpreters may itself be problematic. BSL interpreters are highly-skilled and operate in a market where there is a constant demand for their services. Agency rates of the order of £140 for a minimum three hour period, then £35 per hour are not unknown. For freelance or self employed interpreters the Association of Sign Language Interpreters' (ASLI) 2002 Report on Interpreter Fees and Salaries listed the following average rates: daily rate £145.91; hourly rate £22.07; minimum fee £58.80 (see the Council for the Advancement of Communication with Deaf People's website www.cacdp.org.uk) .Because BSL interpretation is demanding interpreters need frequent breaks and tend to sign for no more than 30 minutes in any 45 minute period.

Other issues

G.24 Three other issues are considered below: the requirement on providers to consult with the Consumer Panel on the requirements and interests of disabled customers; a mystery shopping exercise by Ofcom into how providers promoted services for disabled customers; and the duty in section 10 of the Communications Act on Ofcom to encourage the development and availability of telecoms apparatus.

Condition 15.1

G.25 This condition requires communications providers to consult with the Consumer Panel "from time to time … to ensure that the requirements and interests of disabled end-users are fully taken into account in the development and provision of its services". Ofcom strongly believes in the value of dialogue between communications providers and their customers, including those with disabilities. Hence the requirement for consultation is vital and needs to be maintained.

G.24 The requirement was drafted at a time when the role of the Consumer Panel had not been fully determined. Its principal role is " to understand consumer issues and concerns related to the communications sector … and helps inform Ofcom's decision-making by raising specific issues of consumer interest"
(www.ofcom.org.uk/about_ofcom/boards_panels/brds_adv_bodies/consumer_panel)
As this is essentially a strategic remit we now believe it would be more appropriate for consultation to take place with Ofcom itself rather than with the Panel. The Consumer Panel agrees with this proposal. Ofcom will of course be able to draw on the advice of the Consumer Panel, the Advisory Committees and other stakeholders.

G.25 When Ofcom publishes the post-consultation statement there will be a consultation on the relevant amendment to General Condition 15.1.

QG1 Do you agree that communications providers should be required to consult Ofcom to ensure that the requirements and interests of disabled End-users are fully taken into account in the development and provision of services?

Publicising the services offered under General Condition 15

G.26 Paragraph 15.8 of the General Condition requires communications providers to "take all reasonable steps to ensure that the services which it provides in order to comply with the obligations [of the condition] are widely publicised".

G.27 In 2004 Ofcom commissioned an independent mystery shopping exercise. In May 145 telephone enquiries were made to the customer service numbers of seven major communications providers, three fixed and four mobile. The purpose of the research was to find out whether providers informed potential customers about these services, at first unprompted and then with a prompt. Stakeholders have frequently made the point that it is not sufficient for a service simply to be made available to those customers who know about it, it must also be publicised.

G.28 Although the sample size of the research was insufficient on which to base definitive conclusions, there was an indication that some providers perform better than others. Ofcom has written to all the providers involved in the research informing them of the findings of the exercise. Ofcom intends to repeat the research in 2005 using a larger sample.

Terminal equipment

G.29 The availability and affordability of terminal equipment falls outside the scope of the USO, which is restricted to electronic communications networks and services. However section 10 of the Communications Act 2003 imposes a duty on Ofcom to take steps to encourage others to secure –

- the development of domestic electronic communications apparatus capable of being used with ease by the widest possible range of individuals; and
- that such equipment be as widely available for acquisition as possible.

G.30 Ofcom will publish proposals on how it intends to carry out this duty in due course.

Annex H

Provision of a connection upon reasonable request

H.1 BT and Kingston are each required to provide access to basic telephone services upon reasonable request and at uniform prices, irrespective of location. Where installation of a new line costs £3,400 or less, BT's makes a standard charge (£74.99 for residential, £116.33 for business). Where installation costs over £3,400, BT requires the user to pay the excess costs (plus its standard charge).

H.2 Section 7 of the consultation considers BT's current approach and concludes that, whilst a threshold seems sensible and that a formal consent should be issued in this respect, the figure of £3,400 may be arbitrary and therefore needs further examination. This annex provides additional clarification in relation to Ofcom's options proposed with relation to the threshold. The regulatory impact of the various options is assessed fully in section K below.

Work involved in providing a new connection

H.3 As explained in Section 7.7 of the consultation, the £3,400 connection charge applies only to the first narrowband line at a site. In response to a request for information, BT has provided Ofcom with information regarding the work involved in providing a new connection.

H.4 BT advises that the average cost of a 'normal' connection, that is, one falling below BT's £3,400 threshold, is about £200. BT has broken this cost down into three core elements:

- Routing and jumpering – this is the allocating and recording of a new line, and providing a connection from the Main Distribution Frame in the local exchange;
- Incremental D-side capital – distribution cables, or 'D-side cables', are the secondary cables that link a primary connection point (known as a cabinet) to the final distribution point serving an end-user. One D-side cable may serve tens of distribution points but a particular distribution point is normally only served by one D-side cable. The term 'incremental D-side capita' refers to the average amount of new D-side cable connections needed to be built per new customer connection; and
- Providing the final drop into the customer's premises and the network terminating equipment.

H.5 BT advises that this cost is fully allocated with overheads taken from its Regulatory Accounts, and does not include any margin or return on capital, ie it is entirely cost-based with no profit element.

H.6 Ofcom is advised that, when BT is asked to provide a new line, BT checks to see whether additional infrastructure is required to provide the connection. If so, BT carries out a survey and assesses the charges, based upon the work required. These charges are in addition to BT's standard connection charges.

H.7 BT has advised Ofcom that it looks for the most cost effective solution possible in order to meet the needs of customers. Customers may opt to carry out certain elements of the connection work themselves, on their own land and at their own expense. Any ducts and cable provided remain BT property and may be used by BT to provide service to any other customer. If requested by the customer, BT can supply ducts free of charge for the customer to install to the agreed specification. In these cases the duct remains BT's property.

H.8 There are several chargeable elements of a connection, including the following:

Elements requiring a single payment charge

- Breaking/drilling through a wall.
- Provision of other building entry points (eg underground through floors).
- Provision of a pole.
- Provision of a new footway box on an existing duct route to connect to the BT network.

Elements with a per metre connection charge

- Cable (fibre or copper) including any jointing required.
- Copper cable supplied for the customer to install themselves to agreed entry and termination points.
- Laying armour cable directly into the ground ie without ducting; (this is in addition to cable charges for the cable itself).
- New ductwork.
- Trunking.

Additionally, charges will be raised for:

- Provision of any radio charges; these are subject to survey and any miscellaneous non standard or specially requested items will be individually priced.
- Any internal wiring.
- Timescale rates for out of hours working.

H.9 BT has advised Ofcom that the level of its charges for each of these elements reflects the costs incurred.

How BT applies the £3,400 rule

H.10 Paragraphs 7.13 and 7.14 of the consultation summarise how BT applies its £3,400 rule in practice. Further information on how the rule is applied is outlined below.

H.11 BT has explained that its £3,400 rule (including the £3,400 discount on its excess charges) only applies in certain circumstances:

- The connection must be one covered by the universal service condition, ie an ordinary narrowband PSTN line.
- The £3,400 discount only applies to the first PSTN line provided at a site. Multi-tenanted premises are eligible to one discount per site. BT defines a site as 'an area of land owned or occupied by an individual customer within a boundary that is not divided by the public highway'.

H.12 The £3,400 discount does not apply:

- where the customer requests specific provision methods which are not the least-cost method of providing service. In the event that the customer requests a more costly method of providing service, BT will charge the customer the actual charges for this requested method of providing service minus the lower of either £3,400 or the charges for the least cost method;
- to non-served premises, temporary service lines, temporary structures such as site offices, alternatively routed lines, timescale work associated with out-of-hours working.

H.13 BT advises that multiple customers who take service simultaneously can share excess construction charges, provided that they organise this co-operation themselves, with each customer having their own £3,400 allowance.

H.14 BT does not take into account whether other customers in the geographical area in question may subsequently also want service, thereby benefiting from the connection work carried out. Nor does BT retrospectively pay back to customers the sum already paid if another customer uses the same plant, or some part of it, at a later date.

H.15 BT has advised that, over a recent twelve month period, it provided connections under its USO involving excess charges to 28 customers. In the same period, BT completed a total of two million orders for PSTN lines. This figure covers USO and non-USO situations, including orders for first and additional lines, switched lines, and connections provided at non-served premises, eg site offices.

How far does £3,400 go?

H.16 As explained in sections 7.13 and 7.14 of the consultation, Ofcom considers that going forward the £3,400 figure seems rather arbitrary. In an attempt to place the rule into context, Ofcom asked BT to explain what distances could be covered by a connection costing BT no more than £3,400. The results are explained in detail below. Whilst they are rough estimates only, they suggest that £3,400 may not go very far, and that excess charges may not necessarily be confined to remote locations. £3,400 would pay for:

- 160 metres of overhead cable supported by four poles[10];
- 25 metres of ducted cable under carriageway or roadway[11];
- 109 metres of directly buried armour cable, where no duct is required[12]; or

[10] Assuming £11.20 per metre for 160 metres and £400 per pole for 4 poles spaced at no more than 50 metres apart – this equates to £3392.
[11] Assuming £125 per metre duct and £11.20 per metre cable - this equates to £3405

- just over 0.6km of cable for the customer to have installed by themselves across their own land[13].

H.17 BT has stressed that these are only some examples of duct and cable provision and that there are other methods of delivery which apply according to the circumstances of location.

H.18 Where the £3,400 threshold is exceeded, BT requires the customer to pay only the amount over and above £3,400 (plus the standard connection charge). BT claims that, based upon its connection charge of £64 (excluding VAT), annual rental of £107 and average call spend of £140 per year for a residential customer, it would take over 13 years for a connection to generate enough revenue to pay back BT's £3,400 discount. BT also argues that there is no requirement for a customer who benefits from the discount to remain with BT for any period of time.

Cases involving excess charges

H.19 Ofcom commissioned qualitative research earlier this year to find out more about the circumstances in which the 28 customers referred to above agreed to pay BT an excess charge[14]. The key findings are summarised below.

Geographic location

H.20 Of the total 28 customers, ten were located in England (most of these were in the south), nine were in Scotland and nine were in Wales. Of the 12 customers participating in the research:

- five were in England, four in Scotland and three in Wales;
- seven lived within half a mile of their nearest neighbour;
- eight had mobile reception at their premises;
- four lived less than a mile away from the nearest public payphone; and
- four lived over two miles away from the nearest public payphone.

Demographic profile

H.21 Of the 12 customers interviewed, over half (seven) were under 45 years old and three were over 55. Of the 8 residential customers interviewed:

- all owned their homes;
- one had a disability (restricted use of limbs);
- three had children under 18;
- three were working full time; and

[12] Assuming £20 per metre trenchwork and £11.20 per metre cable – this equates to £3401.
[13] Assuming 607 metres at £5.60 per metre – this equates to £3399.

[14] BT supplied Ofcom with contact details of the 28 residential and business customers who had paid an additional fee to have a BT line installed between April 2003 and March 2004. During May and June 2004 Continental Research conducted telephone interviews with 12 of these customers on behalf of Ofcom. Eight of these were residential customers, and four were businesses. The researchers were either unable to contact the other customers or those customers did not wish to participate. This research was conducted in accordance with data protection requirements.

- two received state pensions.

Need for a telephone line

H.22 The 12 interviewees were asked what their main reasons were for wanting a telephone line. The most common reason given by the residential customers was to be able to make social calls. They clearly valued being able to make calls without relying on mobile phones – in some cases this was because of cost whilst other customers explained that they had no mobile reception.

H.23 The four business customers all said they wanted the line in order to access the internet and make business calls, and commented that they would not be able to run their business without a fixed connection.

Level of excess

H.24 The interviewees were fairly evenly spilt on whether they thought the excess charge they were required to pay was reasonable or not. However, it was not always clear from the anecdotal evidence how BT had calculated the additional charge required from the customer.

H.25 Four customers asked whether they could use a non-BT contractor to carry out some of the work (it is not clear from the research results whether BT itself advised customers of this possibility); BT appears to have been helpful in this regard.

Connection charges in other utilities

H.26 In both the water and energy sectors, particularly in energy, regulatory intervention under sectoral powers in relation to connection charges is greater than in telecommunications. Key aspects of these policies are summarised below.

Water

H.27 Where the supply is for domestic purposes, the water company may recover its reasonable costs incurred. Where the supply is for non-domestic purposes, the water company is permitted to recover a rate of return in addition to its reasonable costs. The water regulator, Ofwat, has powers to determine whether charges are reasonable; in doing so, it considers in particular:

- the specific work done and whether it was necessary;
- whether there was a competitive contract; and
- overheads.

H.28 The possibility of contracting out – referred to as 'self lay' – seems to be widely offered.

Energy

H.29 Connection policy in electricity and gas has a number of common features:

- At present, connections are not price controlled.

- The regulator, Ofgem, can determine what the reasonable cost of the work should be and would expect companies to have reasonable and legitimate reasons for any price increases.
- The elements of the connection work that a company can recover are set out in its licence. A company is required to publish its charging principles.
- A customer can use an independent contractor to carry out certain defined parts of the connection work.

Gas – other features:

- A Gas Transporter ('GT') has a statutory duty to provide connections to premises where it is economical to do so.
- For domestic premises within 23 metres of a relevant main, a GT is obliged to connect premises and provide and install assets necessary for the connection of the premises. The GT is entitled to make a charge for providing this service.
- This charge will depend on the circumstances of the connection. For example, sometimes the work may qualify as an infill project where a group of customers share the cost of connection.
- For premises more than 23 metres from a suitable main or consuming more than a certain number of kW per hour, the GT will quote a price. All work to connect such premises is chargeable.

Electricity – other features:

- A Distribution Network Operator ('DNO') is required to provide and install assets necessary for connection of premises to its distribution network.
- Under the Electricity Act, a DNO may require any expenses reasonably incurred in providing any electrical line or electrical plant to be defrayed by the person providing the connection to such extent as is reasonable in all the circumstances.
- If spare capacity is subsequently used by another development in the vicinity, there are procedures for reimbursing part of the costs to the original connectee.

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Annex I

Functional Internet Access

I.1 As designated USPs, BT and Kingston are required to provide users with a narrowband connection capable of 'functional internet access' (FIA) upon request. FIA Guidelines were issued in July 2003. They apply only to BT and Kingston. Ofcom does not propose making substantive changes to the Guidelines for a number of reasons, including that they were only issued last year and appear to be having a positive effect upon internet access speeds. However, to aid transparency and enforcement, Ofcom proposes that the Guidelines should be refined to help ensure that USPs are complying with the requirement to provide FIA. The Guidelines as they currently stand are set out in Box I.1.

Connection speed

I.2 The Guidelines refer to a benchmark connection speed of 28.8 kbit/s. As explained in paragraph 8.7 of the consultation, FIA is a requirement on a designated USP and therefore the benchmark connection speed can refer only to those aspects of an internet connection which are within the control of that USP, that is, the quality of the physical connection, or line, and the rate at which signals can be transmitted over that line. This connection speed (or line speed) is different from the speed at which information is downloaded from a website.

I.3 The transmission capability of a line is most frequently expressed as a data rate, in bits per second (bit/s or bps) or sometimes bytes per second (Byte/s or Bps). One Byte is equal to 8 bits, so that a data rate of 3.6 kByte/s is equivalent to 28.8 kbit/s and a rate of 6.25 kByte/s is equivalent to 50 kbit/s. This different terminology can sometimes be confusing, giving the misleading impression that an end-user is experiencing lower connection speeds than is in fact the case.

I.4 The data rate reported for a connection, eg by a system performance software tool or as a figure displayed at the bottom of the screen on the notification bar of some web browsers, can also cause confusion. It could be any one of the following:

- The data terminal equipment (DTE) speed. This is the rate at which the end-user's own computer and modem communicate.
- The data communications equipment (DCE) speed. This is the speed of data communications between the consumer's modem and the modem to which it is connected at the far end. This is the rate which most closely reflects the transmission rate of basic data through the designated provider's line.
- The download speed, ie the rate at which the web page or document is being downloaded. When a document is sent between two points in a network, not all of the data sent contains information about the document, a proportion of the data actually sent is needed to set up and maintain the communications link. Therefore if a DCE of 56 kbit/s is achieved, not all of

the 56 kbit of data sent each second contains information on the document. The amount of document data downloaded in that second is therefore less than 56 kbit, perhaps 50 kbit. A document download speed which might at first glance appear to be low (particularly if it is expressed in bytes rather than bits), may on further consideration in fact reflect a DCE connection speed from the designated provider that is sufficient for 'functional Internet access'.

Factors limiting data speeds

I.5 The maximum speed at which information can effectively be conveyed between a service provider (eg ISP, e-mail service provider, web page host, etc) and an end-user is limited by a number of factors:

- the capability of the service provider's terminal equipment;
- the capability of the end-user's terminal;
- the transmission capability of the networks connecting them together; and
- the transmission capability of the line serving the end-user. (This is discussed in more detail below in the context of line sharing.)

I.6 In addition, the end-user's terminal connection arrangements may adversely affect internet access speed, for example if an end-user has installed a number of devices, these may cause interference.

Data speeds over the public telephone network

I.7 Since 1999, most new PCs have been supplied with V.90 modems, which offer a maximum data speed of 56 kbit/s although in practice this speed is rarely, if ever, actually achieved. Equally, most ISPs have V.90 compatible 56 kbit/s ports at their end of the communications link. There is therefore widespread availability of end-user terminal equipment which can support data transmission at 56 kbit/s. However for narrowband access to the Internet, that is access using a public telephone network, the bandwidth of the access connection is now the crucial factor limiting transmission speeds.

The FIA Guidelines

Guidelines on functional internet access

The requirement to provide a connection which permits functional internet access

1. A provider designated for the purposes of universal service ('the Provider') is required under the specific universal service conditions to provide telephony services at data rates that are sufficient to permit functional Internet access.

2. This obligation relates to:
   - a single narrowband connection only: it does not extend to other types of connection, such as broadband or ISDN; and
   - the connection itself, not to other matters outside the control of the Provider, such as an end-user's computer or Internet service provider.

3. These Guidelines clarify the circumstances in which Ofcom is likely to consider that the Provider is offering functional internet access.

4. Ofcom will consider that the Provider is providing functional internet access

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where it is able to demonstrate that it is making every reasonable effort to ensure that lines achieve optimum performance, particularly where the end-user intends to use the line for internet access.

5. In forming a view on whether the Provider is making every such reasonable effort, Ofcom will look at:
   - the data rate achieved by the connection;
   - the measures taken by the provider in respect of pair-gain devices, such as DACS [Digital Access Carrier System];
   - the measures taken by the provider in response to complaints about unsatisfactory internet access, which are not related to pair-gain devices; and
   - the provider's general management and business processes.

Data speed achieved by the connection

6. Ofcom has considered the capabilities of networks, local line plant and terminal equipment currently available. It has concluded that end-users should be able to expect that single narrowband connections will support data transmission at a reasonable speed.

7. Whilst Ofcom is not mandating a minimum speed, it is of the view that, at the current time, a connection speed of 28.8 kbit/s is a reasonable benchmark for functional internet access. Over time, this rate may need to be revised to reflect advances in networks and equipment, and changing social and economic conditions.

Measures taken by the provider in respect of pair-gain systems

8. The following are an indication of the measures Ofcom expects the Provider to take in connection with pair-gain devices, such as DACS. There may be other scenarios not specifically addressed below; the following matters are nevertheless likely to be relevant.

Where an end-user requests a second line

9. The Provider should establish whether the second line is intended to be used for internet access.

10. If the line is intended to be used for internet access, the provider should take all reasonable steps to avoid fitting, or using existing, pair-gain systems. Reasonable steps include:
    - providing an unused line without pair-gain devices fitted;
    - rearranging existing lines to provide a line without pair-gain devices fitted;
    - carrying out minor network infrastructure build to provide new lines without pair-gain devices fitted; and
    - carrying out any other reasonable measures to provide a new line in preference to the use of pair-gain devices.

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Where an end-user complains about the performance of an existing line used to access the internet

11. Ofcom considers that where a line is fitted with a pair-gain device, such as DACS, the line is unlikely to achieve optimum performance.

12. Therefore, where an end-user complains about the performance of a line used to access the internet and the line is fitted with a pair-gain device, the Provider should take all reasonable steps to provide the end-user with a line without a pair-gain device fitted, for example by:
    - removing the pair-gain system altogether;
    - providing an unused line without pair-gain devices fitted;
    - rearranging existing lines to provide a line without pair-gain devices fitted;
    - transferring the pair-gain system to a more suitable line;
    - carrying out minor network infrastructure build to provide new lines without pair-gain devices fitted;
    - deploying an alternative, less detrimental pair-gain system where possible; or
    - carrying out any other reasonable measures to provide a new line in preference to the use of pair-gain devices.

Where the Provider is carrying out modifications to its network

13. If, having exhausted other options, the Provider needs to fit existing lines with pair-gain systems or transfer a pair-gain system to another line, it should ensure that this will not adversely affect an existing user of narrowband access to the internet.

14. There are several methods open to the Provider to assess the use of other lines, one of which is to examine call data records. Whilst Ofcom suggests this as an example of a reasonable method for checking the use of the line, the provider should be aware of its responsibilities with respect to the use of call data records. The information gained from call data records must only be used for the purposes of establishing whether narrowband internet access is used on a particular line. As detailed in Oftel's *Statement on BT's marketing of internet services and use of joint billing (19 May 2002),* it must not be used for any marketing purposes.

Measures taken by the provider in response to complaints about unsatisfactory internet access, which are not related to pair-gain devices

Investigation

15. Where the Provider receives a complaint from an end-user about unsatisfactory connection speed, the Provider should take the end-user through a series of self-tests, such as checking the data speed displayed on the end-user's computer, and removing all other terminal equipment eg fax machines, from the connection

16. Further investigation, such as the Provider conducting a site visit to test the

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connection itself, is required only where it is established that the end-user is experiencing connection speeds which are persistently lower than the benchmark of 28.8 kbit/s. The Provider is not required to investigate further where the problem clearly falls outside its control, eg there is a problem with the end-user's computer or internet service provider.

Minor problem with the network

17. Unsatisfactory internet access may be caused by a minor problem, eg interference, a problem with the final link (underground or overhead) from the distribution point to the end-user's premises, or some other easily repairable fault.

18. Where the Provider establishes that there is a minor problem, it should take action at the earliest opportunity to ensure that the end-user's connection provides functional internet access, in particular that it is capable of achieving the benchmark data speed of 28.8 kbit/s.

19. Ofcom recognises that there may be circumstances where there is a significant problem with the network and it is not reasonable and/or proportionate to expect the Provider to take action on the basis of a single complaint about unsatisfactory internet access.

20. The Guidelines address two examples of such a significant problem below. There may be other scenarios not specifically addressed below; the following examples are nevertheless likely to be relevant.

Distribution ('D-side') cables

21. These are the secondary cables that link a primary connection point (known as a 'cabinet') to the final distribution point serving an end-user. One D-side cable will probably serve tens of distribution points but a particular distribution point is normally only served by one D-side cable.

22. Where the Provider establishes that there is a problem with a D-side cable, it should log the complaint against that particular cable and, when the threshold indicated below is reached, take action at the earliest reasonable opportunity to ensure that functional internet access, in particular a benchmark connection speed of 28.8 kbit/s, is provided to the affected end-users.

23. *Threshold*: where the Provider logs substantiated complaints regarding 10 per cent or more of the working circuits terminated on a particular cable at a particular distribution point or at a particular cabinet.

Main ('E-side') cables

24. These are the cables that form the first stage of the route from the exchange building to the customer's premises. At the exchange end, they terminate on the main distribution frame. The remote end terminates in a cabinet. One E-side cable can serve several cabinets, and equally a particular cabinet can be served by more than one E-side cable.

25. Where the Provider establishes that there is a problem with an E-side cable, it

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should log the complaint against the particular cable and, when the threshold indicated below is reached, put in place a work programme to ensure that the problem is addressed at the earliest reasonable opportunity. As indicated under 'General management and business processes' below, the Provider should advise Ofcom of any such work programme.

26. *Threshold*: where the Provider logs substantiated complaints regarding 10 per cent or more of the working circuits terminated on a particular cable at a particular cabinet.

General management and business processes

27. Where it is not possible on any given line to remove pair-gain devices or otherwise achieve a connection speed of 28.8 kbit/s in the short term, the Provider should be able to demonstrate that it is in the process of making, or planning to make, improvements to its network (whether equipment, lines or other part) not capable of supporting 28.8 kbit/s.

28. The Provider should establish appropriate management and business processes to:

- monitor the level of complaints from end-users on connection speeds for internet access and assess the underlying causes;
- monitor the use of pair-gain systems within the network;
- ensure that the impact of pair-gain systems upon internet access decreases over time;
- monitor the number of substantiated complaints regarding D-side and Eside cables; and
- provide Ofcom with regular reports concerning the above issues, including details of any work programmes regarding improvements to its network to deliver functional internet access.

I.8 At Ofcom's request, and as mentioned in paragraph 8.14 of the consultation, BT carried out a study over a two week period in June 2004, collecting information on the data rates achieved by a significant number of dial-up customers across its entire network. BT's Dial IP platform deals with a large volume of UK dial-up traffic, and customers accessing the internet through BT's network use a variety of ISPs.

I.9 BT was able to present results for 690 of its 699 DLEs in service at that time. The calls measured originated from a minimum of 100 different customers for each DLE and the average number of different customer lines tested for each DLE was over 1100. In the final results, data measurements from 6.7 million calls from over 775,000 unique customer lines were used, giving an average of 8.7 calls tested per customer.

I.10 The sample size represents 2.7 per cent of the BT line population and 8.9 per cent of all BT lines generating ISP calls over the first six months of 2004.

I.11 The data collected by BT for each call was the caller line identification ('CLI'), the final connect speed (downstream) and the modem modulation used. The CLI provided information on the location of the customer connection so that the geographic distribution and relevant physical characteristics of lines displaying lower data rates could be studied. The modulation standard employed by the end-user's modem was checked to ensure that this was not the limiting factor in the data rates achieved, and only those calls made using the V.90 standard (which can achieve 56.6 kbit/s) were included in the final results.

Consumer research

I.12 In 2004, Ofcom commissioned research to evaluate what internet users with a narrowband connection understand about internet connection speeds. In particular, Ofcom was interested in whether consumers knew the connection speed they receive at home and the speed that they should be able to expect as a minimum[15].

I.13 Perhaps unsurprisingly, there was low awareness of narrowband speeds: 71 per cent of those with dial-up narrowband at home did not know the connection speed they usually obtained at home. 82 per cent did not know the minimum connection speed they should be able to expect. Those able to give a figure were most likely to mention 56 kbit/s. This suggests that few consumers are aware of the FIA requirement.

I.14 Consumer satisfaction is also relevant in the context of the review of the Guidelines. Research carried out in November 2003 suggests that overall satisfaction with home internet service remained fairly stable over the preceding two to three years, at around 90 per cent of homes with narrowband internet access[16]. However, on the whole satisfaction with the speed of service seemed to decline, especially amongst narrowband unmetered customers – this may be related to increasing awareness of broadband services, which offer higher speeds than narrowband.

BT's compliance with the Guidelines

Line speeds

I.15 Paragraph 8.14 of the consultation refers to information about line speeds provided by BT in 2003 and subsequently in 2004. In 2003, BT advised that about three per cent of its narrowband connections were not capable of achieving 28.8 kbit/s. This figure was based on an analysis undertaken by BT in 2000 of 1.6 million calls made over a seven day period.

I.16 Ofcom had concerns about the results of that study, bearing in mind the small number of calls analysed in relation to the total number of digital local exchanges ('DLEs') in the UK, and asked BT to conduct a new, more extensive study for the purposes of the 2004 review of universal service.

[15] A representative sample of 2228 UK adults aged 16 and over was interviewed in May 2004.
[16] A representative sample of 2159 UK adults aged 15 and over was interviewed in November 2003; 50 per cent of these claimed to have internet access at home and in turn 78 per cent of these had a narrowband connection.

I.17 BT therefore carried out a study over a two week period in June 2004, collecting information on the data rates achieved by a significant number of dial-up customers across its entire network.

I.18 The results produced by BT show that:

- only 0.9 per cent of lines achieved an average data rate of 28.8 kbit/s;
- 99.1 per cent of lines achieved an average rate of 28.8 kbit/s or higher;
- 94.2 per cent of lines provided average data rates above 33.6 kbit/s
- 30 per cent of lines achieved data rates between 43 and 46 kbit/s.

I.19 The study also revealed that only 1.2 per cent of the lines tested had DACS fitted. This is in comparison with the estimated three per cent of lines across the whole network which have DACS fitted, and may suggest that BT has had some success in moving DACS away from those lines used for data communications.

I.20 An assessment of the geographic distribution of the lines which could not achieve 28.8 kbit/s showed no significant clustering of problem lines in particular areas. Lines not achieving 28.8 kbit/s fell within 45 per cent of DLEs and lines not achieving 33.6 kbit/s were spread across 85 per cent of all exchanges. BT is following up its study with a programme of measurement concentrating on the lines that do not achieve 28.8 kbit/s, with the aim of establishing the causes of the low data rates, whether these lie in the network and how any problems identified can be addressed. These findings are expected later this year.

I.21 As a separate piece of work, BT is developing a network performance measurement tool which will enable BT to assess the data rate performance of lines across the whole network. It will help BT determine where problem lines are located, ie lines which are not capable of delivering 28.8 kbit/s. It will be a permanent network management tool which will allow BT to assess data rate capabilities without carrying out expensive one-off studies such as that described above. BT is committing significant resources to this tool and intends to roll it out – subject to the outcome of feasibility studies and trials – in 2005.

I.22 On the basis of the information provided by BT, Ofcom believes that the Guidelines are helping to ensure the provision of FIA in the UK. However as outlined in section 8.19 of the consultation document, Ofcom believes there is scope for improvement and has outlined four options for consideration (S.8.22 – 8.25). A regulatory impact assessment of Ofcom's preferred option (option 2) is detailed in Annex K.

Network problems other than DACS

I.23 Section 8 of the consultation discusses how DACS affects line speeds and how BT appears to be responding positively to the Guidelines in this respect. DACS is only one of the possible causes of unsatisfactory connection speeds. The Guidelines therefore consider a range of situations which may give rise to a complaint and how, in general terms, these should be addressed.

I.24 Where there is a relatively minor problem, eg interference or a faulty drop-wire, the Guidelines suggest that the provider should remedy this at the

earliest reasonable opportunity. However, where there is a more serious infrastructure problem, the Guidelines acknowledge that it may not be proportionate or reasonable to require the provider to resolve on the basis of an individual complaint.

I.25 The Guidelines therefore state that the provider should log complaints against the particular piece of its network causing the problem. When it receives a certain number of complaints, depending on the size of the cable involved, it should:

- either take action at the earliest reasonable opportunity to ensure FIA; or
- put in place a work programme to address the problem in the longer term.

I.26 BT has advised Ofcom that it has not yet had reason to take either of the above steps, as the level of complaints received and traced back to a particular part of its network have not reached the 'trigger level' set out in the Guidelines. However, BT appears to have set up detailed processes to ensure that complaints are properly captured and logged against the relevant part of BT's network, and that its network planning teams are alerted when the trigger level is reached. In addition, BT has advised Ofcom that it is developing solutions, including automated processes, to improve the way in which complaints against particular parts of its network are recorded and monitored.

I.27 On the basis of both Ofcom's own research and information provided by BT (and to a lesser extent Kingston), Ofcom is currently of the view that the Guidelines are having the desired effect in ensuring the provision of FIA. However, as Ofcom's preferred option set out in Section 8 of the consultation discusses, there is some scope for improvement by refining the wording of the Guidelines. The revised Guidelines would make clear that Ofcom does not consider 28.8 kbit/s to be an optimal connection speed or 'target' but rather a benchmark minimum speed, i.e. the minimum connection speed that an end-user should reasonably be able to expect. In addition, under the preferred option, clarification would be added of what information Ofcom expects from USPs about their compliance with the Guidelines and how frequently this information should be provided.

Annex J

Costs and Benefits of Providing USO

Introduction

J.1 Under section 70 of the Communications Act 2003, Ofcom may from time to time review the extent, if any, of the financial burden for a particular designated universal service provider ("USP") in complying with the universal service obligation ("USO"). If on conclusion of the review, Ofcom determines that it would be an unfair burden for a USP to bear, it may determine that contributions are to be made by other providers to whom general conditions apply.

J.2 At this stage, Ofcom has not conducted a full review of costs under section 70. Instead, the objective of this annex is to look at the cost and funding of universal services to see whether there have been any changes since the last assessment undertaken by Oftel in August 2001.

J.3 Oftel's position in 2001 was that there was no demonstrable unfair burden on BT as a result of its USO, therefore the question of creating a universal service fund did not arise. This conclusion was reached following an update of the estimates of costs and benefits to BT which had been derived through a complex modelling exercise undertaken in 1995/96.

J.4 The present exercise aims to provide an indication of how much the net cost of universal service might currently amount to.

J.5 The net cost of universal service is the difference in the USP's financial performance with and without the USO. It is calculated as the difference between the costs of universal service and the benefits of universal service. The reason for this is that the net US cost is not limited to the direct financial costs that the USP would avoid if it did not have to comply with the USO. Indeed it is widely agreed that the USP derives some benefits from the obligation, which may enhance its financial performance.

J.6 The evaluation of the net US cost is divided into three stages:

1. An evaluation of the costs.

This requires an evaluation of three elements: customers, exchange areas and public call boxes (PCBs), which are `uneconomic' for the USP to serve, using an analysis of the relevant costs and revenues associated with each element. This yields a measure of the universal service costs.

2. An evaluation of the benefits.

This requires an estimation of the impact of factors not yet taken into consideration, which would affect financial performance were the provider to lose its US status.

3. Net cost.

Those benefits should be subtracted from the universal service costs to derive the net cost of universal service. [17]

J.7 Ofcom believes that the outcome of the present study, combined with an indication of the likely advantages and disadvantages associated with the options that are discussed and proposed in the document, should provide stakeholders with a reasonable idea of the overall picture of the current USO and how this may change in future.

J.8 Ofcom considers that as the present study shows that there appears to have been little change since 2001, a full review is not currently required (see paragraph 9.22 of the consultation document).

Universal service costs

J.9 The provision of universal services imposes US costs on the operator charged with the USO, if its overall financial performance would be improved without the obligation. Costs of universal service might arise for some customers or groups of customers, because the USPs are required to offer the same tariffs to all customers in their designated areas, whilst the costs of service provision differ between different parts of the country (and between customers).

J.10 To evaluate whether or not a customer is uneconomic, a comparison should be made between the costs that the USP would avoid if it were to discontinue service to that customer (the long run avoidable costs, ('LRAC')) and the revenues that it would lose (the long run forgone revenues ('LRFR')). LRAC include operating costs, depreciation and a reasonable return on capital employed. The long run is defined as the period over which all assets are replaced. Therefore, the long run view of costs means that all the costs of the capital equipment that the USP would no longer require if it were to discontinue service to the uneconomic customer would be included in the analysis. This is appropriate because the USO affects the investment decisions of the USP. The service, or set of services, that are no longer required form the relevant increment for which the avoidable costs and foregone revenues would be estimated.

J.11 The measure of LRAC, as derived from the cost information supplied by the USP will reflect that operator's incurred costs. However, the efficient level of avoidable costs should be used in the calculation of the universal service costs. In the event that fund arrangements were to be set up, other operators

[17] In other words, net universal service cost = (universal service costs – universal service benefits), and universal service costs are derived taking into account some elements of costs and revenues. See paragraph J.10 – J.12 for more details of these elements.

should not have to pay for the inefficiency of the USP. An efficiency adjustment should therefore be applied to the incurred LRAC to derive an estimate of the efficient level of costs. In BT's case, the analysis and assumptions used in the review of BT's price controls (retail and network) may inform the level of the efficiency adjustment.

J.12 The concept of forgone revenues extends beyond the revenue received from the customer under analysis. If a customer were to be disconnected, the USP would not only lose the connection, line rental and call charges paid by the customer, but also the call charges for incoming calls to that customer. A proportion of calls, both outgoing and incoming, might be made by other means if the customer were disconnected, eg calls to or from all boxes. A downward adjustment therefore needs to be made to the measured outgoing and incoming call revenues to take account of this.

J.13 The methodological considerations outlined above apply equally to both uneconomic areas, and uneconomic PCBs.

J.14 Therefore the following terminology is applied:

- Universal service costs: calculated as the difference between LRFR and LRAC.
- The LRAC, which include operating costs, depreciation, a reasonable return on capital employed and an efficiency adjustment.
- The US costs net of US benefits are referred to as the USO net cost.

J.15 In the 2001 Statement on USO, the cost assessment was limited to three components:http://www.ofcom.org.uk/static/archive/oftel/publications/consumer/uso0801.htm

- areas of the UK which give rise to a USO cost (uneconomic areas)
- customers (in areas that are otherwise profitable for the USP) which give rise to a universal service cost (uneconomic customers)
- PCBs which give rise to a universal service cost (uneconomic call boxes)

J.16 Some other components of universal service have not been included in the cost studies, either because they are funded by other means (eg BT's maritime services) or because the obligation applies to all operators (eg the provision of access to emergency services, free of charge). The cost of provision of services to customers with disabilities, as required by the Universal Service Order, ie the text relay service, has not been investigated in this exercise. This is because some of the data required to carry out the evaluation of US costs (eg revenues from inbound calls to Textphone users, that in the absence of the text relay service might not be made) is not readily available as BT is not required to collect it for either commercial or regulatory reasons.

J.17 The table below shows the universal services costs as estimated for the period 1995/96, which were used for the Universal Telecommunication Service Statement, published in July 1997 (see http://www.ofcom.org.uk/static/archive/oftel/publications/1995_98/consumer/univ_2.htm) and as updated for the period 1998/99 and used in the Universal Service Obligation Statement, published in August 2001 (http://www.ofcom.org.uk/static/archive/oftel/publications/consumer/uso0801.htm).

Table J.1: Costs of universal service obligations incurred by BT, annual, (£m)

	Original estimate 1995/96	Forecast for 1998/99
Uneconomic areas	5 – 10	5 – 10
Uneconomic customers	30 – 40	38 – 48
Uneconomic payphone	10 – 15	10 – 15
Total	45 – 65	53 – 73

Source: Oftel, Universal Telecommunication Services: A consultative document, (July 1999)

J.18 The outcome of the present exercise is presented in the same format because a similar methodology has been used to derive an indicative update for these costs.

J.19 The present update for 2003/4 reflects to some extent the concerns raised by stakeholders regarding the USO which is the focus of the present review. In particular, Ofcom has attempted to reassess the costs of uneconomic customers and of uneconomic payphones because there have been significant developments in these areas, as illustrated by the data received from BT in relation to PCB activity and LUS and In Contact subscribers.

Uneconomic areas

J.20 Uneconomic areas are derived using an iterative procedure whereby the uneconomic areas are removed until all the remaining areas are economic. Therefore the size of the area considered will affect the end result. Areas have been defined on a local exchange basis because this is the smallest unit for which cost and revenue data is available. The avoidable cost of an exchange area will include:

- the operating costs and an element of capital costs of the local loop, including associated indirect costs;
- the cost of the concentrator centre in the area;
- the cost of dedicated transmission links to the parent local exchange; and
- the cost of calls to and from the area.

The foregone revenues will include:

- revenues billed to customers in that area for both access and calls (line rental, connection charges (appropriately annualised) and outgoing call revenues);
- revenues billed to customers in other areas for calls made to customers in that area (incoming call revenues);
- revenues billed to customers in other areas for calls made by customers in that area, such as calls to 0800 numbers (called-party-pays revenues); and
- revenues billed to operators in other areas for transporting calls to or from customers in that area (interconnect revenues).

J.21 These foregone revenues will be appropriately adjusted to remove revenues that might have been already lost from withdrawing other uneconomic areas

or that might have been replaced by increased demand for services in other areas.

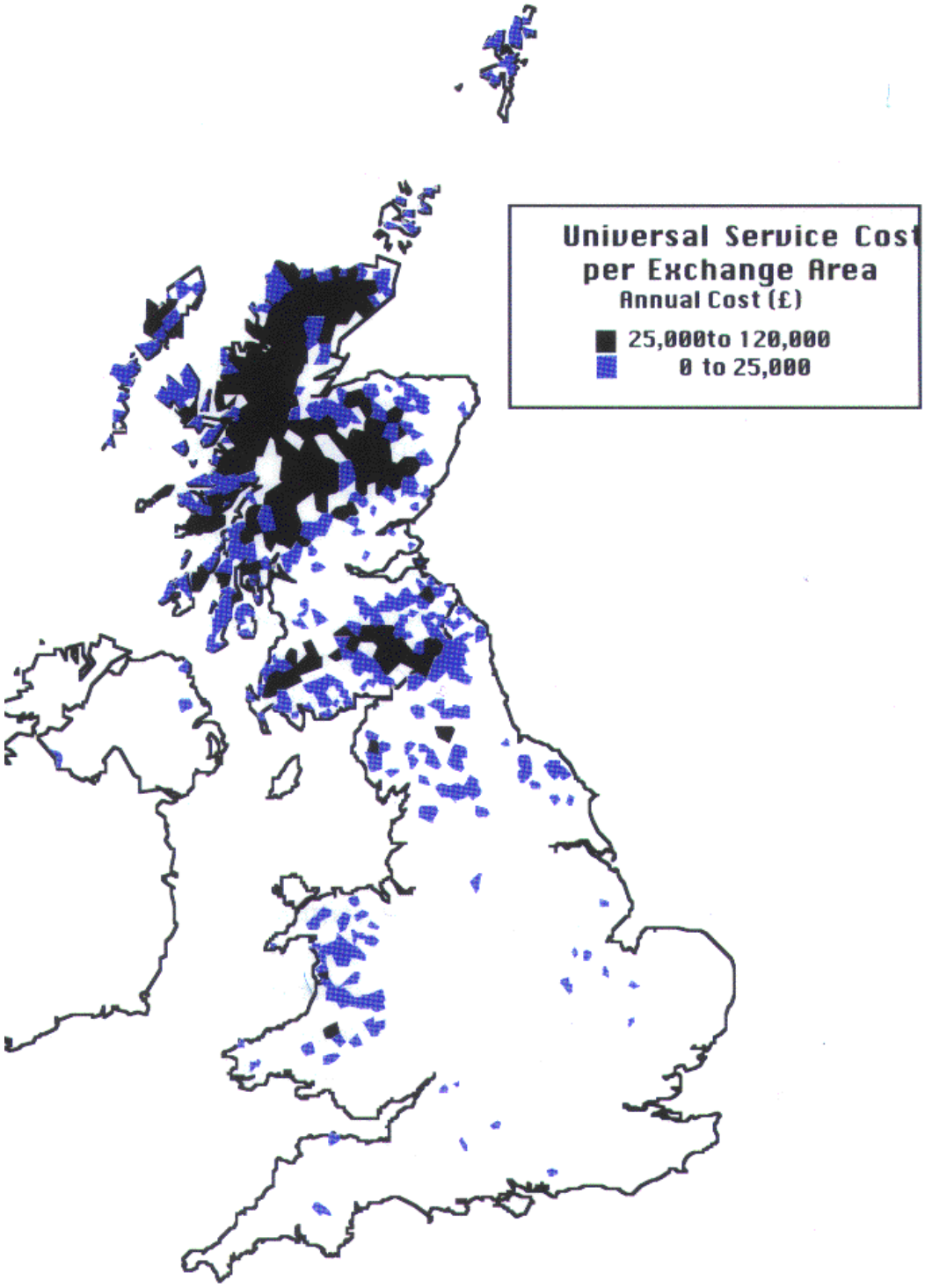
J.21 Some exchange areas in the UK may generate a universal service cost, because they are relatively expensive to serve (eg high local loop cost per line due to low density and/or long transmission links due to remoteness), or because they generate relatively low revenue (eg small number of customers in the exchange area with a small proportion of business customers). It is thus expected that the universal service cost of areas will relate to remote rural areas that are particularly expensive to serve because of their low density of population and geographical characteristics.

J.22 The initial study undertaken in 1995 found that out of about 5,600 local exchange areas, roughly 750/350 of them were uneconomic (dependent on the assumptions made to model differences in incoming and outgoing calls across areas), representing circa 1.4 /0.2 per cent of UK lines, covering 22 per cent/9 per cent of total land area of the UK.

J.23 The study identified uneconomic areas in West Scotland (eg Tayinloan (Shetland Isles), Port Charlotte (Islay Island)), North Scotland (eg Uyeasound, Kildary), East Scotland (eg Cleish Hills, Luthrie), Middle Yorkshire (eg Skyehouse, Aldbrough), North Wales (eg Castle Caereinon), South Wales (eg Martlewy), Northern Ireland (eg Roslea, Beragh), North East England (eg Powburn) and Central Midlands (eg Kineton).

J.24 The map below formed part of the 1997 USO consultation. It illustrates which areas of the UK were found to be uneconomic and the extent to which they contributed to the USO cost.

Figure J.1 UK map showing uneconomic areas



Source: Oftel, Universal Service Obligation consultation, February 1997, chapter 7.

J.25 The areas shown are rural areas with a small number of lines (per area – fewer than 2,000 lines per local exchange area) and a low line density (number of line per square kilometre – fewer than 325 per square km). These areas are uneconomic because they generate low revenues and are expensive to serve due to the low density of population and/or to the distance between the concentrator and the next exchange.

J.26 In order to provide an indication of the universal service costs of uneconomic areas it is necessary to consider the avoidable costs and foregone revenues for each particular area. Such data is not readily available because BT does not collect it automatically for commercial or regulatory purposes. This is why for the purpose of this exercise Ofcom has used national average retail data that BT is required to provide as part of its financial reporting obligation.

J.27 Ofcom recognises the limitations of using this data as a proxy for average LRAC and LRFR for particular areas. First, because it is national average data, it does not capture cost differences at the local exchange level, which is one of the reasons why some areas are uneconomic. Second, the limitation of using retail data is that it is at tariff (the same input cost incurred by interconnecting operators paying BT for the same services) in order to demonstrate non-discrimination. Therefore there is an element of profit included in this retail input cost relating to BT's upstream activities that would not be included in calculating the LRAC. As a result, this retail data is likely to over-estimate wholesale costs. Ofcom therefore focuses on longitudinal trends, rather than relying on the absolute levels of retail costs and revenues, when considering how the costs of uneconomic areas has changed, based on the national average retail data available.

J.28 Before considering BT's national average costs and revenues for fixed lines, Ofcom has considered the number of lines and line density. These two factors were identified as cost drivers for the universal costs of uneconomic areas in the original study.

J.29 It is assumed that the number of lines in uneconomic areas depends on the population in these areas. Ofcom believes that the percentage of the UK population living in uneconomic areas has not changed significantly since the last update and is likely to still be around one percent. Indeed there has been an increase in the UK population since the initial estimate. (The 2001 National Census reports a 2.9 per cent increase in the UK population since 1991) with differing rates in the nations (eg Scotland's population is declining, Wales' is increasing at a slower rate than the UK average). At the same time however there has been a trend of migration to rural areas (for example, in Scotland). On the basis of this evidence and given that the initial range of the uneconomic population estimates was quite broad, (between 1.4 per cent and 0.2 per cent see paragraph J. 22) Ofcom considers that the estimate that about 1 per cent of the UK population lives in uneconomic areas is reasonable. As a result, there is no immediate reason to anticipate a significant change in the number of lines, and hence in the line density, as it is assumed that the area covered has not increased.

J.30 Further insight into whether or not there has been significant change in the number of fixed lines can be gained by looking at the number of PSTN[18] fixed lines supplied by BT over the last four years. Table J.2 below summarises the

[18] Public Switched Telephone Network ('PSTN')

numbers of PSTN fixed lines supplied by BT and of call minutes carried over these lines.

Table J.2: Numbers of PSTN fixed lines supplied by BT and of call minutes carried over these lines.

	2000/01	2001/02	2002/03	2003/04
Number of fixed lines (000)	29,142	29,462	29,144	28,445
Number of call minutes (m)	171,384	204,455	231,315	227,510
Number of call minutes per line	5,881	6,940	7,937	7,998

Source: Ofcom's Communications Market 2004 and Oftel Market Information

J. 31 This table reveals a gradually decreasing trend in the number of fixed lines and a significant increase in call minutes, leading to an even greater increase in the number of call minutes per line. These developments match the key findings of Ofcom's latest report on the Communications Market (http://www.ofcom.org.uk/research/industry_market_research/m_i_index/cm/qu_10_2004/?a=87101). This report highlights a significant increase in telecom expenditures (i.e. average amount in £ spent on telecoms bills) as well as a relative increase in mobile telephony expenditure and other fixed voice supply (such as cable) compared to fixed telephony.

J.32 Ofcom considers that even if the number of lines and the line density do not vary, the LRAC and LRFR might. This is because there are a number of other drivers that may be used to derive avoidable costs and foregone revenues. Those drivers may in turn influence the costs of uneconomic areas. For reasons mentioned above, Ofcom uses changes in retail data covering average costs and/or revenues per fixed PSTN line as a proxy for LRAC and LRFR. It therefore considers the evolution of changes in national average costs and revenues, calculated at 'non-discriminatory, retail tariff' since 2000/01 as indicative of the changes in LRAC and LRFR.

J.33 Looking at the national average retail data for fixed lines over the last four financial years, Ofcom distinguishes two sources of costs and revenues from fixed lines: line rentals and calls. As explained earlier (see para J.27), given the limitations of using retail data as proxy for LRAC and LRFE, Ofcom focuses on the trends revealed by these data, both on a per line basis and on a per call minute basis.

J.34 Between 2000/01 and 2003/04 fixed line rental revenues increased and fixed line rental costs decreased (to a greater extent than the revenues), leading to a significant increase in the rental margin (ie difference between costs and revenues). Since the number of fixed lines has barely decreased over the same period (as shown in Table J.2), this suggests that the average per-line margin derived from rental has increased significantly. During the same period call revenues and call costs both decreased by a similar percentage. Given that the number of fixed lines has almost not changed, this has led to a similar decrease in the per-line margin from calls. Overall, the significant increase in per-line rental margin more than offsets the decrease in the per-line call margin. This leads to a significant improvement in the average per-line total margin.

J.35 Figures for per-call minute margins reveal a slightly different picture because the number of call minutes has significantly increased during the period whereas the number of fixed lines has slightly decreased. All the cost and

revenue indicators for per call minutes have decreased. On average, call margin per call minutes has decreased but line rental margin per call minute has increased to a greater extent. On balance, this leads to a material increase in average total margin per call minute.

J.36 These observations match the conclusions published in Ofcom's Communication Market 2004 report, which shows that the average revenue per call minute has decreased, partly due to a shift of tariff structure to more flat rates during off-peak hours. However the report further indicates that since the volume of calls from fixed lines has increased – with BT's total number of call minutes up by about 20-25 per cent - and the standard line rental has increased, the per line margin has improved.

J.37 The above evidence relating to trends in average costs and revenues per line seems to suggest that it is reasonable to expect that on average the costs of uneconomic areas has not increased. Indeed the total margin from call and line rental has on average significantly increased over the period. This examination of the data appears thus to go in the same direction as the analysis of the demographic data and PSTN line numbers, namely that the evidence does not appear to support an increase in the costs of uneconomic areas.

J.38 The present exercise of updating the data does not include the costs borne by BT to meet its functional internet access obligation. Although BT has provided Ofcom with figures detailing some of the costs incurred in order to meet the 28.8 kbit/s recommendation, Ofcom is not currently in a position to estimate the percentage of these costs that BT would have otherwise incurred in the absence of a specific speed recommendation under the USO (as BT is clearly not obliged to say what it would do in the absence of the USO). Indeed it is reasonable to consider that BT would have come under pressure from various stakeholders (end-users as well as ISPs) to adapt its network to improve speed delivery, and that BT would have done this in a certain number of places.

J.39 Based on the above considerations, Ofcom considers that the cost of uneconomic areas is unlikely to have increased. Therefore Ofcom is minded to believe that the previous estimate still represents a reasonable indication of the universal costs and is inclined to maintain the estimate of cost for uneconomic areas at its previous level.

Uneconomic customers

J.40 Within economic areas some customers may generate a universal service cost, because they are relatively expensive to serve (eg there is a long line from the exchange) or, more typically, because they generate relatively low revenue (eg a low calling customer). These customers are referred to as uneconomic customers.

J.41 The LRAC of a customer will include the operating costs and an element of capital costs of that customer's line, including the associated indirect costs, plus the cost of that customer's outgoing and incoming calls. As for uneconomic areas, there are four types of revenues that would be foregone as a result of withdrawing service from a customer:

- revenues billed to a customer for both access and calls;

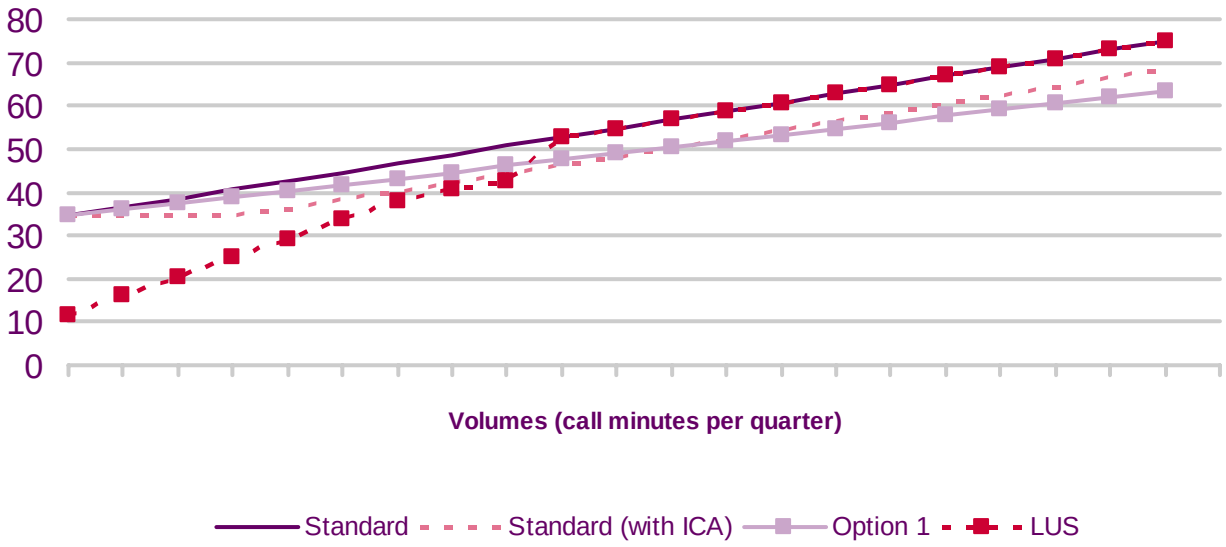
- incoming call revenues;
- called-party-pays revenues; and
- interconnect revenues.

J.42 Two types of uneconomic customers can be distinguished: those on special customer schemes and those who are not. The initial modelling work concluded that the main source of universal service cost relates to the group of customers on special customer schemes. Oftel's Universal Telecommunication Services1997 consultation found that only 30 per cent of LUS customers were uneconomic and these uneconomic LUS customers generated 80 per cent of the universal service costs of uneconomic customers. The present study relies on those conclusions and focuses on updating the costs generated by these special scheme customers.

J.43 Special schemes include the Light User Scheme (LUS) and the In Contact (IC) scheme. Although LUS is described as offering a discount on the line rental if the call bill is below a certain threshold, with the amount of the discount increasing as the call bill decreases, effectively it offers a reduced line rental and a higher call charge, provided the bill is below a certain threshold. This is illustrated in Figure J.2 below, where the call charge per package is represented by the slope of the line depicting that package.

Figure J.2. Comparison of LUS tariff with other BT tariffs.

Total quarterly bill (£)



Source: Ofcom market intelligence

J.44 If the LUS customer makes no calls, the customer pays only £11.74. As the volume of call minutes increases, the bill increases at a pence-per-minute rate represented by the slope of the red line illustrating LUS. If the slope of the red line is steeper than the slope of the other lines, it means that the pence-per-minute charge paid by LUS users is higher than for other packages. As the number of call minutes increases and reaches certain amounts (for example, 350 or 400 minutes) the pence-per-minute charge paid by the LUS user changes. When it reaches 450 minutes there is alignment of LUS to BT's standard package.

J.45 The IC scheme offers a reduced line rental in exchange for barring all outgoing calls, except to emergency and fault repair/customer services numbers and freephone numbers.

J.46 For both schemes, it is only when the LRAC of a customer is higher than the LRFC that the customer becomes uneconomic. It is the combination of the reduced line rental under the scheme and low levels of calls that might generate a universal service cost for BT if the line rental and call charges for either type of user do not cover the LRAC of the line.

J.47 Information submitted by BT shows that the number of LUS users has been decreasing since 2001, with a low number of IC users (which has also decreased in recent years (see Table J.3 below).

Table J.3 Numbers of LUS and IC users over the period Q1/1999 – Q1/2004

	Jan-March 99	Jan-March 00	Jan-March 01	Jan-March 02	Jan-March 03	Jan-March 04
LUS users	2.49m	2.25m	1.82m	1.55m	1.37m	1.19m
IC users	27k	45k	60k	63k	64k	53k

Source: Ofcom/Oftel/BT

J.48 Key factors that are likely to influence the net cost of LUS include the change in the number of LUS users, the change in the average calling patterns of LUS users, and the change in the level of line rental relative to the level of avoidable costs. Based on data provided by to Ofcom, there has been a substantial reduction in the number of LUS users (from 2.5m users in first quarter of 1999 to 1.2m users in first quarter of 2004). Ofcom is aware that some of the data needed to estimate the impact of the other two factors on the LUS universal service costs (eg revenues from inbound calls to LUS users) is not readily available because BT does not collect it for commercial or regulatory purposes. This is why, for this update, Ofcom focuses on the impact of the first factor on the cost of LUS, as this can easily be derived based on existing methodology and the available data.

J.49 An estimate of the impact of a fall in the number of LUS users is based on the assumption that the universal service cost per LUS customer is the same. At the time of the last update, there were 2.6m LUS users. The figure for the universal service cost of uneconomic LUS users was updated to £28-38m. As the number of LUS users has decreased to 1.2m ie by 54 per cent, it is considered that the universal service costs for LUS users should be reduced correspondingly by 54 per cent. This indicates that the universal costs of LUS would amount to about £13-17m, a reduction of about £15-21m since the last estimate.

J.50 The universal service cost of IC is anticipated to have increased since the last time it was estimated because the number of IC users has doubled. Assuming that the universal service cost per IC customer is the same, it can be inferred that the universal service costs generated by the uneconomic IC users have also doubled. This means that the universal service costs of the IC scheme are likely to have doubled from £3m (as estimated for the 2001 Statement) to a maximum of £6m.

J.51 The developments in the number of LUS and IC subscribers suggests that Ofcom's indicative estimate for the universal service cost of uneconomic 'special scheme' customers would now be in the region of £19-23m.

J.52 The universal service costs of other uneconomic customers, ie those that do not subscribe to special schemes, was initially estimated at around £5-8m (1997 Statement). This estimate remained unchanged in the 2001 Statement.

J.53 Ofcom carefully considered the important factors that might alter this figure. These factors are similar to most of those that apply to the costs of uneconomic areas (see paragraphs J.20 – J.39). An examination of the national average retail data for fixed lines gives a rough indication of how the cost of supplying these other uneconomic customers might have evolved. The analysis of this data, as detailed in paragraphs J.34 and J.35, leads Ofcom to conclude that the average per line total margin has significantly improved and that the per call minutes total margin has increased. Although the evidence relates to the national average and not to the specific set of customers under consideration, Ofcom considers that the evidence does not support an increase in the universal service costs of these other uneconomic customers. Thus, Ofcom is minded to maintain that estimate at its previous level.

J.54 Based on the above considerations relating to the two types of uneconomic customers, Ofcom considers that it is reasonable to assume that the cost of uneconomic customers has decreased significantly since the last estimate. The cost of uneconomic customers is equal to the total of the costs of special scheme customers and other uneconomic customers. The indicative estimate for the former shows a substantial decrease whereas the indicative estimate for the latter is maintained at its previous level. Therefore once both indicative estimates are combined, the result is a significant decrease:

Estimated universal services costs of LUS	£13-17 m
Estimated Universal service costs of IC	£ 6 m
Estimated cost of uneconomic special scheme customers	£19-23 m
Estimated cost for other uneconomic customers	£ 5-8 m
Ofcom's total indicative estimate for uneconomic customers	**£24-31 m**.

Uneconomic public call boxes

J.55 Some PCBs may incur a universal service cost when they are relatively expensive to serve (eg frequently vandalised) or because they generate relatively low revenues. The avoidable cost of a PCB will include the operating costs and an element of relevant capital costs of the call box equipment, including associated indirect costs, the cost of the line to the exchange, and the cost of calls to and from the call box. The revenues foregone as a result of withdrawing service from a PCB include revenues collected from the PCB, revenues billed to other customers for calls made to the PCB (incoming call revenues), revenues billed to other customers for calls made from a PCB, such as calls to 0800 numbers (called-party-pays revenues), revenues billed to other operators for transporting calls to or from a PCB (interconnect revenues), as well as revenues from advertising by third parties.

J.56 Oftel's initial estimate of the universal service cost of uneconomic PCBs was around £10-15m and that figure was not revised in its first update.

J.57 Since March 2002, BT has engaged in a programme for the removal of certain PCBs in order to improve the profitability of its payphone business. In two years, BT has removed about 20,500 PCBs and it plans to remove an additional 9,000 PCBs. In part this is a response by BT to falling usage of PCBs as mobile penetration has increased. Information submitted by BT reveals a sharp decrease in the number of call minutes made from payphones, which fell by 53 per cent between March 1999/2000 and March 2002/03. Consumer research confirms that a key reason for the fall in use of PCBs is the increase in mobile use. According to BT, additional reasons for removing PCBs are the cost of crime, (estimated by BT at £18.2m), and the cost of illegal advertising.

J.58 BT has provided Ofcom with information about the number of unprofitable PCBs and the loss they generate. This is summarised in Table J.4 below (data provided is for the twelve month period to 20 May 2004). BT distinguishes between unprofitable payphones that cover their operational costs but do not cover their indirect costs (Type B) and those payphone that do not even cover their operational costs (Type A).

Table J.4: BT's unprofitable PCBs

	Number	Loss (£m)
Type A PCBs	25,597	26
Type B PCBs	19,861	7.4
Total	45,458	33.4

Source: BT

J.59 For the present update, Ofcom has relied on BT's fully allocated cost (FAC) and revenue figures for these unprofitable payphones to derive an upper bound for the cost of uneconomic PCBs, estimated to be around £33m (for the twelve month period to 20 May 2004).

J.60 In principle, the universal service cost is based on LRAC and LRFR. It is usually the case that LRAC is smaller than FAC because the size of the relevant increment for LRAC is small and only the costs corresponding specifically to that LRAC increment will be avoided. Similarly it is usually the case that the LRFR figure differs from the operator reported revenues. For example, the latter does not usually include revenues from incoming calls.

J.61 On the basis of the information readily available, Ofcom has only been able to identify a few components that are likely to contribute to the difference between FAC and LRAC, namely R&D/marketing/computing, Chargecard costs, street recovery costs, accommodation, and people. Indeed by removing universal service PCBs, BT would only avoid a certain percentage of these common costs. In the absence of more detailed information, Ofcom is not in a position to ascertain the percentage of these common costs which would be part of LRAC. It considers that the reduction in costs could vary between £0 (if all these costs were included in LRAC) and about £10m (if most of them were excluded).

J.62 However Ofcom is aware that there are other sources of differences between LRAC and FAC, as well as between LRFR and revenues, although the information is not readily available. (This is because BT does not gather such information for commercial management or regulatory purposes). For example, on the cost side, a variable proportion of the various access and transport costs components would disappear as a result of removing uneconomic payphones.

J.63 On the basis of the above considerations, Ofcom considers that an upper bound for a reasonable indicative estimate of the universal service cost of US payphones would be the range of £23-33m.

Conclusions

J.64 The table below summarises the indicative estimates regarding the costs of main USO components.

Table J.5: Annual costs of universal service obligations incurred by BT (£m)

	Original estimate 1995/96	Forecasts for 1998/99	Indicative estimate of costs for 2003/04
Uneconomic areas	5 – 10	5 – 10	5 – 10
Uneconomic customers	30 – 40	38 – 48	24 – 31
Uneconomic payphone	10 – 15	10 – 15	23 – 33
Total	45 – 65	53 – 73	52 – 74

Source: Oftel, Universal Telecommunication Services, July 1999 and Ofcom calculations

J.65 Table J.5 reveals that the magnitude of US costs appears not to have changed much although the contribution of its different components has. In particular, the cost of uneconomic customers is estimated to have decreased significantly whereas the indicative update of the cost for uneconomic payphones shows a sharp increase.

The benefits of serving uneconomic areas and customers

J.66 The term ‘benefits’ refers to the beneficial effects of providing universal service on the current or future financial performance of the USP not accounted for in the cost methodology. For example, the benefit of revenues from outgoing and incoming calls is already accounted for as the universal service cost is calculated as the difference between avoidable costs and forgone revenues and thus not included in the benefits. Benefits should be subtracted from the universal service cost in order to derive the universal service net cost, which is the true cost to the USP.

J.67 In principle, the scale of these benefits would be revealed in a competitive auction for the minimum subsidy that an operator would require to take on the responsibility for providing specified elements of the USO (or, the maximum price an operator would be prepared to pay for the right to provide specified elements of universal service). In the absence of a competitive auction for all elements of universal service, it is necessary to make an assessment of the scale of benefits. Whilst there are difficulties in arriving at a robust

quantification of benefits and a degree of judgement will inevitably be involved, Oftel previously estimated these benefits for the 1997 Statement, updated for the 2001 Statement. For the present exercise Ofcom attempts to provide an indicative estimate.

J.68 Traditionally, the benefits generated by USO are said to be: ubiquity benefit, life-cycle effect benefit, brand enhancement and corporate reputation benefit, and advertising on call boxes. Renewed discussions about the issues of benefits have led to the identification of the following additional possible sources of benefits: advertising on other support (such as bills), customer database, volume discounts, and non-USO services. The precise nature of these different benefits may vary somewhat between uneconomic areas and customers, and uneconomic PCBs.

J.69 Since the objective of the present study is mainly to give an indication of the order of magnitude of the benefits, building on Oftel's past work, Ofcom considers it appropriate at this stage to focus on the benefits analysed previously.

J.70 Given the four traditional components identified in paragraph J.68 above, Oftel's approach was to quantify those effects that could be roughly modelled (e.g. the value of having the BT logo on uneconomic PCBs). However some effects could not be quantified. For example, in modelling the life-cycle effect it was not possible to quantify the actual number of uneconomic customers that BT would continue to serve even if it did not have a USO. Such data is not available and there is no agreed methodology by which to derive it. Oftel recognised its conclusions were therefore a "best estimate" of the benefits concerned. Nevertheless, Ofcom considers that the impact of such benefits should not be ignored when making the overall judgment about the size of benefits.

J.71 In the August 2001 document, Oftel clarified that it may have overestimated the benefits in 1997. In particular it acknowledged that the ubiquity benefit is likely to be insignificant in the case of the UK because the benefit to BT from the USO exists only where customers move from uneconomic areas to economic areas. Since around 1 per cent of the population live in uneconomic areas, the ubiquity benefit arising simply because of the USO on BT is likely to be very small.

J.72 In that same publication, Oftel also acknowledged that its initial estimate of the life-cycle benefit may have been over-estimated by assuming that all unprofitable customers would become profitable. This led Oftel to consider that the benefits from life-cycle effects are likely to be significantly reduced.

J.73 Table J.6 is a summary of the benefits estimated for the 1997 Statement, and updated for the 2001 Statement.

Table J.6: Annual benefits to BT from universal service obligations (£m)

	Original estimate 1995/96	Forecast for 1998/99
Life cycle effect	£1-10m	£0-1m
Ubiquity	£40-80m	Insignificant
Brand-enhancement and corporate reputation	£50m	£50m
Advertising on PCBs	£11m	£11m
Total	£102-151m	£61-62m

Source: Oftel, Universal Telecommunications Services, consultation document, July 1999

J.74 In the present exercise, Ofcom attempts to provide an indicative estimate of the benefits arising from serving uneconomic areas and customers, namely, life cycle effects, ubiquity, and brand enhancement and corporate reputation. Also, the benefits which arise from serving uneconomic PCBs.

Life cycle effects

J.75 By serving an unprofitable customer now, the operator may increase its probability of keeping that customer in the future when serving that customer becomes profitable. In previous work on life cycle effects, (a phenomenon also observable in other sectors such as banks and building societies), the assumption was that if serving a customer would become profitable within 5 years, it would be worthwhile to serve that customer now. Given that the proportion of uneconomic customers that can reasonably be expected to become profitable in the future is small, Oftel's last estimate for the life-cycle benefit amounted to £0-1m. Based on the assumption that the key factors used to quantify this benefit appear not to have increased (eg number of uneconomic customers, likelihood that an uneconomic customer will become profitable), Ofcom is minded to retain its previous estimate.

Ubiquity

J.76 The ubiquity benefit arises when a customer moves from an uneconomic area into an economic area in which there are competing suppliers and chooses BT to provide service only because of a lack of awareness that competing providers exist. (Such customers would have chosen a supplier other than BT had they been fully informed). Over time, as these customers find out about competing suppliers, they will tend to switch away from BT. The benefit to BT is the profit obtained from those customers in the period prior to the switch.

J.77 In its last estimate of the ubiquity benefit, Oftel acknowledged that the number of customers fitting this description is very small. Ofcom is of the same view ie it considers that the ubiquity benefit only exists when a customer moves from an uneconomic area to an economic one and therefore the benefit is likely to be very small. Accordingly Ofcom considers it appropriate to maintain the estimate at its previous level, namely that the ubiquity benefit is insignificant.

Brand enhancement and corporate reputation

J.78 Benefits are likely to accrue to the USP by serving uneconomic areas and customers through enhanced brand image and corporate reputation and hence which will impact on the provider's overall current and future profitability. The USP's brand is enhanced through fulfilling its USO. This affects the customer's perception (of its own, and other operators' brands).

J.79 More generally, brand enhancement can be considered as having an annual monetary value for the USP, in terms of savings in advertising and marketing costs that it would otherwise have had to undertake to achieve the same effect. In previous work, Oftel estimated the brand enhancement and corporate reputation benefit by assuming that it could be represented by a certain percentage of BT Retail's expenditure on marketing and advertising.

J.80 In its 1997 Statement, Oftel estimated that if the brand enhancement were worth 20 per cent of BT Retail's marketing and sales expenditures, the value of this benefit would be about £50m. For the 2001 Statement, Oftel maintained that estimate. Based on BT Retail's marketing and sales expenditure data for 2003/04 (£259m), Ofcom considers that if the brand enhancement benefit is worth 20 per cent of BT's retail marketing and sales expenditures, an indicative estimate of the benefit would be in the region of £50-52m.

Conclusion on the benefits of serving uneconomic areas and customers

J.81 In a competitive environment the USP obtains a variety of benefits from the provision of universal service. Some benefits arise from life cycle effects and ubiquity; however these are estimated to be relatively small. The USP also obtains a significant benefit in terms of brand enhancement and corporate reputation. Furthermore, many commercial organisations choose voluntarily to retain a proportion of customers that are unprofitable at any point in time for a variety of reasons, including lack of perfect information about the identity of the unprofitable customers and imperfect targeting (ie actions to remove service from unprofitable customers may inadvertently lead to the loss of profitable customers). Based on the considerations above, Ofcom considers that £50-53m is a reasonable indicative estimate of the benefit derived from serving uneconomic areas and customers.

The benefits of serving uneconomic call boxes

J.82 Life cycle effects are one source of benefit to the USP of providing PCBs. There is significant variability in revenues obtained from individual call boxes over time. The costs of individual call boxes might also vary from year to year. Therefore, the USP would wish to retain a proportion of the call boxes which happen to be uneconomic at a certain point in time for purely commercial reasons. Ofcom is of the view that recently installed uneconomic PCBs are more likely to become profitable than those that have been on site for several years. However, as these are few in number, it is expected that this source of benefits is likely to be small.

J.83 A further benefit of PCBs to the USP is the value of advertising the company's logo on call boxes and the consequent enhancement to corporate reputation. In order to derive an indicative estimate of the likely scale of this effect,

Ofcom uses a modified version of Oftel's approach, which relied on the following rough calculation. One half of these uneconomic call boxes were assumed to yield no advertising benefit, and the other half were assumed to be worth £100 each per month in advertising benefit (for comparison, an equivalent advertising presence at a London bus stop would then have cost around £200 per month). In Ofcom's update of the rough calculation, the number of BT's unprofitable PCBs is, in order to provide consistency in the methodological approach, the one used previously to derive the universal service cost estimate, i.e. about £45,000 (as shown in Table J.5). Taking a conservative approach, and to reflect the likelihood that many of these PCBs may be in less densely-populated areas or subject to vandalism, Ofcom assumes that only one-third of these PCBs will yield an advertising benefit. Further, Ofcom assumes that the benefit per PCB is likely to be in the range of £50-£60 per month. This provides an indicative estimate of the benefits of about £9m - £11 m (45,000 x 33.3 per cent x £50/£60 x 12).

J.84 Furthermore, as discussed in previous documents, the universal service cost represents an upper bound estimate, because it may include call boxes that BT has added since privatisation and which were therefore installed with the full knowledge of the restrictions on re-siting.

Conclusions on the benefits of serving uneconomic call boxes

J.85 Based on the above considerations, Table J.7 below summarises Ofcom's indicative estimates of the annual benefits to BT from USO.

Table J.7: Annual benefits to BT from USO (£m)

	initial estimate 1995/96	Forecast for 1998/99	Indicative estimate for 2003/04
Life cycle effect	1-10	0-1	0-1
Ubiquity	40-80	Insignificant	insignificant
Brand-enhancement and corporate reputation	50	50	50-52
Advertising on PCBs	11	11	9-11
Total	102-151	61-62	59-64

Source: Oftel, Universal Telecommunications Services, consultation document, July 1999 and Ofcom calculations

The net cost of the universal service obligation

J.86 The net cost of USO refers to the difference between the universal service costs and the universal service benefits. Alternatively an indication of net cost can be obtained by comparing the universal service costs and benefits. Overall Ofcom's indicative estimates for 2003/4 range between £52m-£74m for the universal service cost and between £59m-£64m for the universal service benefits.

J.87 On the basis of these two ranges of indicative estimates and their derivation, Ofcom is minded to conclude that there is no proven case of an undue financial burden on BT that would justify putting in place new universal

service funding arrangements. In Ofcom's view, it is unlikely that there are any customer segments or areas in the UK that BT as a nationally branded operator would choose not to serve.

Conclusions on the costs and benefits of providing USO

J.88 The exercise carried out in this section does not represent a detailed evaluation of the costs and benefits of providing universal service, as would be required under section 70 of the Communications Act 2003. Rather, it is an update of the previous estimates made by Oftel.

J.89 The figures that emerge may be used as an indicator of whether or not a more thorough exercise is worth undertaking. Ofcom's initial view is that this is not the case. Indeed the above exercise appears to suggest that an in-depth exercise is likely to confirm that the USO does not generate an unfair financial burden on BT. Hence this does not currently support the case for a full review under section 70 and the possibility of a change in funding arrangements.

J.90 This does not mean that Ofcom completely excludes the possibility that a section 70 review may be required. If respondents present a convincing case that Ofcom's initial assessment substantially understates the net costs to BT, such that there may be financial burden which is unfair, then Ofcom may consider that a thorough re-assessment of all the costs and benefits of the USO would be appropriate.

Annex K

Regulatory Impact Assessments

Introduction

K.1 The analysis presented in this Annex when read in conjunction with the rest of the document, represents a Regulatory Impact Assessment (RIA), as defined by section 7 of the Communications Act 2003. You should send any comments on these RIAs to us by the closing date for this consultation. Ofcom will consider all comments before deciding whether to implement the proposals.

K.2 RIAs provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making and are commonly used by other regulators. This is reflected in section 7 of the Act, which means that generally we have to carry out RIAs where our proposals would be likely to have a significant effect on businesses or the general public, or where there is a major change in Ofcom's activities. In accordance with section 7 of the Act, in producing the RIA in this document Ofcom has had regard to such general guidance as it considers appropriate, including related Cabinet Office guidance.

K.3 This Annex also sets out how Ofcom's proposals meet the tests set out in sections 3 and 4 of the Communications Act 2003.

- Section 3 imposes general duties on Ofcom, in carrying out its functions, to further the interests of citizens in relation to communications matters and of consumers in relevant markets, where appropriate by promoting competition. Section 3 also sets out certain matters to which Ofcom must have regard in performing its general duties. In considering the proposals in this document, Ofcom has had regard to these matters and in particular to the matters in section 3(4) of the Act, including the needs of persons with disabilities of the elderly and those with low incomes. In this context, Ofcom also notes that section 3(6) of the Act requires it to prioritise its duties under section 4 of the Act, if these conflict with any of its general duties under section 3 of the Act.

- Section 4 sets out the duties on Ofcom for the purpose of fulfilling Community obligations. In considering the proposals set out in this consultation document, Ofcom has taken account of these requirements. In particular, Ofcom has considered the requirement to promote the interests of all persons who are citizens of the European Union.

K.4 Finally, where Ofcom has indicated preferred options in this consultation document which would require modifications to the universal service conditions or the general conditions, Ofcom has considered how these options might meet the tests in section 47 of the Act and has set this analysis out in this Annex, namely that each modification is:

- objectively justifiable in relation to the networks, services or facilities to which it relates;
- not such as to discriminate unduly against particular persons or a particular description of persons;
- proportionate as to what the condition is intended to achieve; and
- in relation to what it is intended to achieve, transparent.

Section 4: Special tariff schemes and disconnections

K.5 In section 4 Ofcom considers three options (paragraphs 4.23 to 4.27) around BT's proposals for a new special tariff scheme to replace the Light User Scheme and In Contact. Ofcom is not recommending one option in particular at this stage but the RIAs in respect of each option are set out below.

Option 1: No change to the BT schemes

Benefits

K.6 Under this option, LUS and In Contact would remain in their current form. It therefore does not increase regulation or create disruption for customers. It provides low income customers with the ability to benefit from the scheme if they meet the eligibility criteria.

Costs

K.7 It is available to, and taken up by, customers from all income groups.

K.8 Ofcom estimates that the costs to BT of providing the schemes are currently between £19-23 m. The number of customers on the schemes has fallen sharply since 2000. A reasonable assumption would be for this trend to continue.

Option 2: BT's proposed new scheme replaces LUS and IC

Benefits

K.9 Option 2 provides savings to customers that are broadly comparable to the existing schemes provided that customers pay using direct debit or a monthly payment plan. The scheme is targeted at low income customers.

Costs

K.10 Although targeted at low income customers, the scheme may not be effective as a result of:

- the reliance on a direct debit discount to provide customers with benefits comparable with existing schemes when low income customers may be unable or unwilling to use such facilities; and
- the exclusion of mobile users when a high proportion of low income households have mobiles.

K.11 Costs are difficult to estimate and depend on the level of take up of the scheme and of the discounts and on the likely calling pattern of customers. Assuming take-up at current LUS levels and take-up levels of discount similar

to those currently reached for BT customers, Ofcom believes that costs to BT will be around 25 per cent lower than under option 1

Option 3: BT's proposed scheme is modified and replaces LUS and IC

Benefits

K.12 These will depend on the outcome of the consultation and on the extent to which the new scheme is modified to take account of concerns raised.

Costs

K.13 Costs would depend on the modifications made. The aim of modifications would be to improve the effectiveness of the scheme, in terms of take-up and benefits to low income customers. Costs to BT could therefore be expected to be higher than option 2.

Section 3 and section 4 analysis

K.14 Section 3 of the Act requires that, in performing its duty to further the interests of citizens in relation to communications matters and of consumers in relevant markets, where appropriate by promoting competition. As Ofcom is not at this stage identifying a preferred option, an analysis is carried out in respect of each of the options.

K.15 Ofcom has considered its duties under section 3 of the Act and all the Community requirements set out in section 4. All the options considered further the interests of citizens in relation to communication matters and of consumers in relevant markets because they are intended to promote the affordability of telecommunication services for low income customers. The proposals will be transparent in that the rules of the schemes are published. They will be proportionate in that they are to be provided only by the USPs and intended to be targeted at low-income customers. They also promote the interests of all persons who are citizens of the European Union by encouraging the accessibility of telecommunications services.

Section 5: Arrangements for the removal of PCBs

K.16 In response to the changes to the market for PCBs, Ofcom identified three approaches for consideration in section 5 (paragraphs 5.20 to 5.43).

- Retain but modify the current arrangements: local public bodies would keep their veto but the process would be made more transparent, accountable and consistent;
- Define a set of USO payphones which would be protected from removal; or
- Remove the existing Direction.

Approach 1: Retain the local bodies' veto but make the process more transparent, accountable and consistent

Benefits

K.17 This approach is consistent with Oftel's conclusions following its full public

consultation in 2003 on the terms of such a Direction. It therefore offers the advantage of continuity for stakeholders and is not expected to lead to an increase in the regulatory burden.

K.18 The procedures for the removal of the last PCB from a Site encourage a more constructive dialogue between BT and Kingston and public bodies, including bringing to BT's and Kingston's attention particular factors in relation to specific sites which might not have been appreciated.

K.19 The procedures for requests for BT and Kingston to install new PCBs appear to work in practice. Ofcom, and formerly Oftel, has not received any complaints or enquiries from stakeholders regarding the procedures.

K.20 If the decision is made to extend the definition of "Site", BT should be able to remove an additional number of PCBs without having to undertake consultation with public bodies, thereby meeting to an extent its concerns regarding the number of unprofitable PCBs.

K.21 At the same time, a new definition should still provide the necessary safeguards for consumers by not placing too great a burden on them to travel when looking for the next available PCB, especially older or consumers with disabilities. In addition, BT or Kingston would still be required to comply with their obligations to consult with relevant public bodies where they propose to remove the last PCB from a Site.

K.22 BT provided Ofcom with a breakdown of the total numbers of PCBs by distance, including the total numbers of these which are unprofitable. The 'Total number of PCBs' is the number of PCBs which have another PCB within that distance. Ofcom would wish to apply caution in interpreting the data if it were to be used to assess how many unprofitable PCBs could be removed without going through the consultation process, because the PCB in question may not be the last one on the site. The data provided does not take into account that if one PCB is removed it will leave another PCB that may not then have another PCB within the distance range ie a spatial impact. BT suggested to Ofcom that if spatial impact were taken into account, the total number of unprofitable PCBs that could be removed without consultation could potentially be half of what is reported.

Table K.1: Breakdown of unprofitable PCBs by distance

Distance between PCBs (metres)	Cumulative total number of PCBs	Cumulative number of unprofitable PCBs	per cent of total PCBs which are unprofitable
100	20,193	6,137	30
200	26,020	8,566	33
400	39,871	16,958	43
500	45,844	21,410	47

K.23 BT has indicated that, based on revenue and costs trends in the last 12 months, it expects to reduce its losses by £8.1 million by removing approximately 9,000 PCBs in the next 18 months. Assuming these 9,000 PCBs are all unprofitable, Ofcom has used these figures to look at possible scenarios for different definitions of Site and to quantify the potential savings to BT. For the purpose of these scenarios, Ofcom has assumed that BT would only remove unprofitable PCBs.

K.24 If the definition of “Site” remained unchanged at 100 metres, BT has 6,137 unprofitable PCBs which could potentially be removed without consultation. However, as noted in paragraph K.24, only about half of these could be removed without consultation. BT would then be left with about 6,000 of the original 9,000 PCBs that it would still want to remove. Assuming that the objection rate remains at its present level, BT might be successful in removing a further 3,000 PCBs with consultation. The potential saving to BT could be approximately £6 million.

K.25 If the definition of “Site” was amended to 200 metres, BT has 8,566 unprofitable PCBs which could potentially be removed without consultation. BT would then be left with about 4,750 of the original 9,000 PCBs that it would still want to remove. Assuming that the objection rate remains at its present level, BT might be successful in removing a further 2,375 PCBs with consultation. The potential saving to BT could be approximately £6.5 million.

K.26 If the definition of “Site” was amended to 400 metres, BT has 16,958 unprofitable PCBs which could potentially be removed without consultation. BT would then be left with about 500 of the original 9,000 PCBs that it would still want to remove. Assuming that the objection rate remains at its present level, BT might be successful in removing a further 250 PCBs with consultation. The potential saving to BT could be approximately £7.8 million.

K.27 It is possible that BT might review the number of PCBs it would like to remove following the end of this review. If so, the figures which Ofcom has provided above for removals and potential savings to BT might change. Ofcom is aware also that the above estimates might understate the potential savings to BT if the clarification of the consultation requirements for public bodies and the right of appeal lead to a reduction in the objection rate.

Costs

K.28 Given that this approach might not lead to the removal of all unprofitable PCBs, there would remain a cost to BT for providing these PCBs. Ofcom does not have the relevant information to estimate that cost. However, an indication of how much loss BT might incur as a result of providing these unprofitable PCBs could be approximated by subtracting the potential savings mentioned above from the losses incurred at present by BT.

K.29 If the definition of “Site” remained unchanged at 100 metres, an estimate of the costs borne by BT from providing unprofitable PCBs would be £27.5 million (£33.5 - £6 million). If the definition of “Site” was amended to 200 metres, an estimate of the costs borne by BT from providing unprofitable PCBs would be £27 million (£33.5 - £6.5 million). If the definition of “Site” was amended to 400 metres, an estimate of the costs borne by BT from providing unprofitable PCBs would be £25.7 million (£33.5 - £7.8 million).

K.30 Since the consultation procedure would be maintained under this approach and BT is planning to remove more PCBs, it is likely that BT will keep facing costs associated with complying with the consultation procedures, for example management, administrative and mailing costs. However, Ofcom is not in a position to give an estimate of their order of magnitude.

K.31 In addition to the above costs to BT from providing unprofitable PCBs, there will also be compliance costs for public bodies in complying with the requirement to consult and deal with appeals (not quantified).

K.32 Also, depending on how many objections are made and the quality of the reasoning for those objections, the Competition Appeal Tribunal (CAT) could potentially be required to deal with a high volume of appeals, with the attendant costs. There is currently no data on how much it costs to deal with appeals to the CAT. The publication of Ofcom's guidance should help to improve the decision-making process.

K.33 One full time Ofcom employee currently spends two business days per calendar month dealing with complaints and enquiries regarding BT's compliance with the Direction.

Approach 2: Defining a Universal Service PCB

Benefits

K.34 This approach would not be expected to increase the regulatory burden.

K.35 It would attempt to define a Universal Service PCB, enabling Universal Service PCBs to be identified on a per PCB basis, and leading to a rational provision of Universal Service PCBs in the UK. This would contribute to making the provision of PCBs more transparent as there would be a standard definition of a Universal Service PCB that could be easily and quickly tested at low costs.

K.36 The definition of a Universal Service PCB would draw on criteria and statistics that Ofcom considers to be relevant to the provision of Universal Service PCBs, which reflect the commercial situation and are available in the public domain, accurate and up-to-date. This would further contribute to the transparency of the Universal Service obligation to provide PCBs.

K.37 Public bodies would not be obliged to comply with the consultation procedures set out in the Act and to provide reasons. Instead, they could better target their resources to ensuring that BT and Kingston comply with the terms of the published algorithm and Direction.

K.38 In theory, a published algorithm may lead to a decline in the number of complaints and enquiries to Ofcom. The reason for this suggested decline is that the algorithm would have been accepted by Ofcom's stakeholders and as a consequence stakeholders would be expected to agree with the algorithm's outcome.

K.39 This approach would retain adequate safeguards for consumers and other stakeholders in terms of the requirement for BT and Kingston to publish standard information, for example on PCBs and on their websites.

Costs

K.40 This approach is based on a published algorithm that has been assessed to be 77 per cent accurate. It would be only as good as the data that was available and used to create it. The algorithm, based on historical decisions and data, would be used to inform present and future decisions to install or

remove PCBs. This might not remain an appropriate tool should the circumstances surrounding the installation and removal of PCBs change in a manner that was not captured by the factors and data used in the model.

K.41 The use of an algorithm, even though it is published, might be viewed as unnecessarily complicated and might not meet the requirement of transparency, leading either to no complaints or a high level of complaints, given its complexity.

K.42 It would not bring to BT's or Kingston's attention particular factors in relation to specific sites that might not have been appreciated and/or captured by the factors and data which were used to create the algorithm.

K.43 Whilst BT should be able to reduce its losses attributable to the provision of unprofitable PCBs, it would not entirely eradicate them. BT might still face losses of approximately £16.5 million.

K.44 To introduce a definition of a Universal Service PCB by means of an algorithm would mean the introduction of a new procedure. BT and Kingston would therefore incur new implementation costs, although the consultation requirements would no longer apply.

K.45 Given the new procedures, it is likely that Ofcom would initially see an increase in the number of complaints and enquiries regarding BT's compliance with the algorithm. If complaints were to be submitted on a per PCB basis, Ofcom's compliance costs could be considerably higher.

Approach 3: Remove the existing Direction

Benefits

K.46 This approach would not be expected to increase the regulatory burden.

K.47 Under this approach, public bodies would not be obliged to comply with the consultation procedures set out in the Act and to provide reasons. BT and Kingston would similarly not be obliged to comply with any consultation procedures. The decision whether or not to provide a PCB would be one for BT or Kingston taking into account their designation as a USP.

K.48 BT and Kingston could consider removing all unprofitable PCBs (45,458 for BT) and many that make a marginal positive contribution to their operational costs. BT in particular would need to take account of its USO requirements, public reaction and the potential to expand successful initiatives. This approach could lead to a potential saving to BT of approximately £33.5 million.

K.49 Under this approach, BT and Kingston would not be explicitly required to offer cash payment facilities in single PCB sites. Depending on how many of such payphones are removed, this approach could lead to a potential saving to BT of approximately £5.3 million in terms of cash attacks on its PCB estate alone. There may be other savings for BT and Kingston in terms of the cost of crime and vandalism to their respective PCB estates and the cost of collecting cash from PCBs.

Costs

K.50 The onus would be on the USPs to ensure that they comply with their USO. It is unlikely that, in the absence of procedures, this responsibility could be met in a way that is transparent. Based on the number of objections BT receives under the current regime and therefore the likely level of complaints, this could be a high onus for BT.

K.51 Under this approach, BT and Kingston would not be explicitly required to offer cash payment facilities in single PCB sites. Consumer groups in the past have shown support for multi-payment options to be available in single PCB sites. There may therefore be a lack of choice for end users in terms of payment options in some PCBs.

K.52 Given the removal of all consultation procedures, it is likely that Ofcom would initially see an increase in the number of complaints and enquiries regarding BT's compliance with its designation as a USP. The potential compliance costs could be high for Ofcom and its stakeholders if BT in particular was considered to be failing to meet its obligations as a USP.

K.53 If this approach failed to work in practice, it could lead to a further review and consultation in what might be a relatively short time since the new regime was introduced, creating further discontinuity.

K.54 Ofcom's preferred approach is to maintain the local veto but improve procedures (Approach 1). In Ofcom's view, local public bodies and communities are in the best position to know about relevant factors in relation to specific sites In addition, the procedures should encourage a more transparent and constructive dialogue between public bodies and BT and Kingston. This approach would ensure that the PCBs to meet the obligation are provided via the least intrusive regulatory mechanism to achieve the policy objectives, is transparent as to purpose and that no undue discrimination arises.

Section 3 and section 4 analysis

K.55 Ofcom has considered its duties under section 3 of the Act and all the Community requirements set out in section 4. Approach 3 furthers the interests of citizens in relation to communication matters and of consumers in relevant markets because, as long as there remains a PCB within a Site, consumers are protected because the PCB cannot be removed without BT or Kingston complying with their obligations to consult with relevant public bodies. It is transparent in that it clearly specifies the procedures which BT and Kingston must comply with for dealing with requests for new PCBs and for the complete removal of PCBs from a Site. This approach is proportionate in relation to the objectives of the USO relating to PCBs, namely meeting the reasonable needs of end users in terms of geographical coverage and the number of telephones.

K.56 Further, this approach is proportionate because public bodies are under a statutory obligation to comply with the consultation requirements set out in section 49 of the Act before they object to the removal of the last PCB from a Site, and BT and Kingston have a statutory right of appeal under section 192

of the Act against the objection of the public body. Also, public bodies have to provide reasons in relation to their power to object to the removal of the last PCB from a Site. All these factors mean that the quality of the consultation procedures should therefore be improved, more transparent and objectively justifiable.

K.57 Approach 1 also promotes the interests of all persons who are citizens of the European Union by ensuring that the reasonable needs of end users are met in terms of geographical coverage and the number of telephones, in an appropriate manner.

Section 6: Options for video relay

K.58 In Section 6 Ofcom explains that the text relay service is rooted in traditional voice telephony and that many stakeholders consider that the service has not kept pace with technology. In paragraphs 6.8 to 6.13, Ofcom sets out options considering the possible extension of the relay service to encompass video.

Option 1 – Require the implementation of a video relay service now

Benefits

K.59 This option would give BSL users the possibility of using a video relay service at the earliest opportunity. The extent of the impact on customers is unquantifiable as it is not clear how many BSL users would use the service given the size of the BSL community and the availability of a text relay alternative.

Costs

K.60 The first option would have a major impact on providers as it would not be possible to integrate video relay into the existing text relay service platform without substantial investment. Additional costs would be incurred by the need to deploy scarce BSL interpretation resources.

Option 2 – Rule out the introduction of a video relay service

Benefits

K.61 The status quo option would have no additional impact on providers.

Costs

K.62 This option would disappoint a significant group of stakeholders, denying them a potentially useful service.

Option 3 – Commission a study into the feasibility of a video relay service

Benefits

K.63 The preferred option would have no impact on providers other than information requests. It would have the advantage of providing a thorough examination of all relevant issues before a decision is made.

Costs

K.64 The feasibility study has resource implications for Ofcom as it will require a mixture of internal staff resources, consultancy and/or academic input.

K.65 Because a number of unknown factors need to be assessed before a conclusion on the costs and benefits of a video relay service can be drawn up, Ofcom's preferred option is that a feasibility study should be undertaken (option 3).

Section 3 and section 4 analysis

K.66 Ofcom has considered its duties under section 3 of the Act and all the Community requirements set out in section 4. Option 3 furthers the interests of citizens in relation to communication matters and of consumers in relevant markets because the aim of the study will be to ensure a proportionate approach to meeting the needs of customers with disabilities and its findings will be published and transparent. It also promotes the interests of all persons who are citizens of the European Union by ensuring appropriate developments to the relay service..

Section 6: Relay governance options

K.67 In Section 6 (paragraphs 6.14 to 6.17) Ofcom considers whether it may be beneficial to establish an Advisory Panel which could look at more strategic issues and involve both users and communications providers.

Option 1 – invite tenders to provide a relay service

Benefits

K.68 By creating fully independent relay management, this option would address the concerns of some stakeholders who argue that, as BT's primary duty is to its shareholders, it lacks the incentive to invest in improvements to the relay service.

Costs

K.69 This option would have a very significant impact on providers, especially BT. It would shift BT's role from that of a USP to a source of funding only. Detaching the TextDirect platform from BT's network would also require significant expenditure even if it were technically feasible.

Option 2 – invite BT to set up an Advisory Panel

Benefits

K.69 This option would allow BT to continue to manage its approx £10m annual expenditure but recognises that the service is intended to meet public policy goals.

Costs

K.70 There will be some additional overhead for BT in having to consult with an advisory panel and some delays in decision making. However it will not significantly increase BT's spend on the relay service.

Option 3 – no change

Benefits

K.71 This option would maintain the existing level of regulation and not involve any additional costs.

Costs

K.72 The status quo option would not address the concerns of some stakeholders and would not satisfy the customer demand for greater transparency and accountability.

K.73 Ofcom's preferred option is to invite BT to set up an advisory panel (Option 2) because this is the most proportionate way of addressing concerns about the lack of transparency of current arrangements.

Section 3 and section 4 analysis

K.74 Ofcom has considered its duties under section 3 of the Act and all the Community requirements set out in section 4. Option 2 furthers the interests of citizens in relation to communication matters and of consumers in relevant markets because it takes account of the concerns of customers with disabilities and encourages BT to increase the transparency of the relay service in a proportionate manner. It also promotes the interests of all persons who are citizens of the European Union because the increased transparency of the service proposed is intended to result in a service that is more responsive to the needs of citizen-consumers.

Section 6: Ensuring accessibility to PCBs

K.75 In Section 6 (paragraphs 6.24 to 6.27) Ofcom considers ways in which concerns over the accessibility of PCBs could be addressed.

Option 1: Imposition of new accessibility requirements

Benefits

K.76 The option would help ensure that the accessibility needs of consumers are addressed and that there is consistent approach between PCB providers.

Costs

K.77 This option would have a major impact on PCB providers who would find their ability to adopt innovative designs for PCBs constrained by the need for conformity with detailed design specifications. It would lead to an increased role for Ofcom in terms of considering proposals from PCB providers, who will

need to consult more extensively with Ofcom before commissioning new designs, although it should be recognised that this is not a new obligation.

Option 2: Maintain existing obligations

Benefits

K.78 This is Ofcom's preferred option. There will be some impact on PCB providers who will need to consult more extensively with stakeholders before commissioning new designs although it should be recognised that this is not a new obligation.

Costs

K.79 For customers there will be no immediate impact as a result of this option although an intended outcome is the prospect of more accessible PCBs. It might lead to a marginally increased role for Ofcom in promoting a dialogue between providers and consumers

K.80 Ofcom's preferred option is to maintain the existing requirements but to ensure providers meet their obligation to consult on the design of PCBs. Ofcom is not supporting option 1 because it is too prescriptive. Imposing a single design solution precludes alternative solutions and stifles the possibility of innovation.

Section 3 and section 4 analysis

K.81 Ofcom has considered its duties under section 3 of the Act and all the Community requirements set out in section 4. Option 2 furthers the interests of citizens in relation to communication matters and of consumers in relevant markets because it takes account of customers with disabilities and encourages providers to take transparent and proportionate measures, taking account of the diversity of PCB users, and to avoid installing PCBs that exclude significant groups of users. It also promotes the interests of all persons who are citizens of the European Union because it promotes accessibility of PCBs in an appropriate manner.

Annex G: Specific USO Condition 15.1

K.82 In Annex G paragraphs G.25 to G.27, Ofcom proposes a change to the requirement that communications providers consult with the Consumer Panel "from time to time … to ensure that the requirements and interests of disabled End-users are fully taken into account in the development and provision of its services". Ofcom is proposing that providers should be required to consult with Ofcom rather than with the Panel.

Option 1 – Maintain requirement to consult with Consumer Panel

Benefits

K.83 The status quo option would have no additional impact on providers.

Costs

K.84 The approach under this option, potentially involving significant, detailed and on-going work, does not fit properly with the Panel's principal strategic role " to understand consumer issues and concerns related to the communications sector … and helps inform Ofcom's decision-making by raising specific issues of consumer interest".

Option 2 – New requirement to consult with Ofcom

Benefits

K.85 It would be more appropriate for consultation on the details of implementation to take place with Ofcom itself rather than with the Panel, given its strategic role. Ofcom is in a position to draw on the advice of the Panel, the Advisory Committees and other stakeholders, as appropriate.

Costs

K.86 This change involves a transfer of responsibility from the Consumer Panel to Ofcom.

K.87 Ofcom's preferred option is to amend the condition in order to require consultation on implementation with Ofcom (Option 2) because this more appropriately reflects the roles of Ofcom and the Panel.

Section 3 and section 4 analysis

K.88 Ofcom has considered its duties under section 3 of the Act and all the Community requirements set out in section 4. Option 2 furthers the interests of citizens in relation to communication matters and of consumers in relevant markets by ensuring that providers consult with the most appropriate body on the requirements and interests of disabled end-users in the development and provision of its services. By promoting dialogue with providers, the approach will assist the transparency, accountability and proportionality of services. It also promotes the interests of all persons who are citizens of the European Union because it promotes the development of services for customers with disabilities in an appropriate manner.

Section 47 analysis

K.89 Ofcom considers that the Option 2 proposal is objectively justifiable in that it identifies the most appropriate body to be involved in the consultation with providers. It does not discriminate unduly against particular persons because it applies to all communication providers. It is a proportionate, in that does not place a significant burden on providers but ensures that end-users interests are taken into account. In promoting dialogue between stakeholders it is intended to enhance transparent measure.

Section 7: Options for the provision of a connection on reasonable request

K.90 In paragraphs 7.3 to 7.11, Ofcom explains that under BT's threshold policy, all customers pay the standard charge throughout the UK if the costs are below £3400. Above £3400, prices are not uniform and customers pay according to their individual circumstances. While BT may be applying its £3400 rule uniformly across the UK (excluding Hull), the price paid by end users is variable, as it depends on the cost to BT of providing the connection and whether this falls below the £3400 threshold. Ofcom proposed two options.

Option 1 No change to current approach

Benefits

K.91 This option means no increase in regulation and offers the advantage of continuity for BT and Ofcom.

K.92 Under this approach, a consumer requesting a new connection which costs no more than £3,400 has the benefit of only having to pay BT's standard charge, irrespective of the actual cost of providing the connection. Where the connection costs more than £3,400, the consumer gets the benefit of BT's £3,400 discount, ie the consumer only has to pay the excess (plus the standard charge).

K.93 Option 1 is also attractive in that BT's £3,400 rule is simple for consumers to understand and easy for BT to implement.

Costs

K.94 To maintain the current position could mean that BT would be unable to comply with Universal Service Condition 1, which requires it to charge uniform prices for connection.

K.95 In addition, there is no protection for consumers as regards the price of connection over and above the standard connection charge.

Option 2 Consent, guidance and revision of threshold

Benefits

K.96 The benefits of a financial threshold, continuity and formal consent as mentioned in Option1.

K.97 It is difficult, however, to assess the consumer benefits likely to arise should the threshold remain the same or be increased. This is because BT has not been able to provide details of all cases involving excess charges, including those where the consumer decided not to go ahead with the connection. If the threshold were to be reduced, this would clearly benefit BT although again this is difficult to assess.

K.98 The guidance, together with the threshold, will help ensure BT meets a reasonable request for connection where the cost of providing a connection

exceeds the threshold and BT therefore intends to require the consumer to pay the excess.

K.99 There are also operational benefits to Ofcom in that guidance will help Ofcom deal with complaints about excess charges and ensure consistency of approach.

Costs

K.100 The financial burden to BT will depend to a large extent on the level of the threshold, ie whether it stays at the current level of £3,400, increases or decreases.

K.101 If the threshold remains at the current level of £3,400 and the number of cases involving excess costs is indeed as small as BT has suggested, there should be no significant increase in financial burden upon BT.

K.102 As previously mentioned, Ofcom has asked BT to provide details of requests for connection over a three month period, even where those requests are not actioned. However, even with this information, Ofcom might find it difficult to estimate the impact of keeping the same threshold or revising it. This is because the new information is unlikely to provide a picture of the stock of unfulfilled requests; these requests are likely to be the ones involving excess charges at the higher end of the spectrum.

K.103 Apart from the financial impact of the threshold, there are some resource implications in that BT will need to train its staff to understand and refer to the guidance in addressing requests for connection in accordance with the Universal Service Condition 1.

K.104 There are also some resource implications for Ofcom in issuing consent and guidelines, and possibly also in dealing with an increase in complaints if BT and affected consumers should disagree on interpretation of the guidance.

K.105 Ofcom supports option 2 because it has the advantage of controlling the possible cost increase for BT and provides greater clarity about whether or not a request for connection is reasonable.

Section 3 and section 4 analysis

K.106 Ofcom has considered its duties under section 3 of the Act and all the Community requirements set out in section 4. Option 2 furthers the interests of citizens in relation to communication matters and of consumers in relevant markets because it provides certainty but also enables individual circumstances to be taken into account including the needs of customers with disabilities and of the elderly. Although the detail of Option 2 is not yet finalised, it will help improve transparency and consistency with regard to BT's connection charging policy. It is proportionate in that it applies only to BT as a designated USP. It also promotes the interests of all persons who are citizens of the European Union because it ensures requests for connection are met in an appropriate manner.

Section 8: Options for functional internet access

K.107 Guidelines on Functional Internet Access were issued in July 2003. These specified that users should be able to expect connection speeds of at least 28.8 kbit/s and also set out measures that USPs should take in response to complaints about unsatisfactory data speeds. In Section 8, Ofcom considers options for possible changes to guidelines.

Option 1 No change

Benefits

K.108 Option 1 retains the Guidelines and therefore clarifies that Ofcom's interpretation of FIA involves considering whether a designated provider is making every reasonable effort to ensure that lines achieve optimum performance, including a benchmark speed of 28.8 kbit/s. The Guidelines also describe measures that Ofcom would consider appropriate in order to bring the speed to the recommended level.

K.109 In addition to ensuring a level of protection for consumers and encouraging improvements to narrowband networks, this option ensures continuity with the existing regime. It therefore creates an environment of certainty which may encourage investment by designated providers and also help customers' understanding of their rights.

Costs

K.110 BT has estimated the costs of complying with the current Guidelines over the next five years to amount to about £10.7 million.

K.111 It may be argued that there is scope for improving by means of the current Guidelines the flow of information from designated providers to Ofcom regarding their compliance with the Guidelines. The reference in the Guidelines to 28.8 kbit/s as a 'reasonable benchmark' for FIA may give the impression that Ofcom considers 28.8 kbit/s to be sufficient for FIA rather than a minimum speed that connections should be capable of achieving on a consistent basis. This could be to the detriment of the interests of end-users.

Option 2 Slight amendment to the Guidelines by way of clarification

Benefits

K.112 Option 2 is an enhancement upon Option 1 and therefore offers at least the same benefits.

K.113 The objective of refining the Guidelines is to help Ofcom ensure that the designated providers are complying with the requirements to provide FIA. This is likely to improve the transparency of the FIA obligation, especially in the monitoring of its implementation and in clarifying that 28.8 kbit/s is to be viewed as a benchmark minimum speed rather than a target or ideal.

K.114 End-users too are expected to benefit through Ofcom's improved knowledge of whether BT and Kingston are complying with the Guidelines. Indeed, an

improved flow of information to Ofcom may help improve the average quality of FIA.

Costs

K.115 Since the core of the requirements for designated providers remains the same as under Option 1, Ofcom anticipates that the costs of complying with Option 2 will not significantly differ from those under Option 1.

K.116 Ofcom anticipates a slight increase in the administrative costs both for BT and Kingston, and for itself. For BT and Kingston, these costs will cover the need to improve the flow of information to Ofcom, eg on how they have responded to complaints about unsatisfactory data speeds, and, for BT, on the progress of its DACS removal programmes and other planned network upgrades. Processing this information will have some minor resource implications for Ofcom.

Option 3 Benchmark minimum speed of 33.6 kbit/s

Benefits

K.117 Option 3 would set a slightly higher speed than Options 1 and 2 as a benchmark for FIA.

K.118 A line fitted with DACS will not achieve a speed of 33.6 kbit/s. Option 3 would arguably make it clearer that Ofcom does not consider the use of DACS to be compatible with the requirement to ensure FIA. This option would therefore appear to ensure the removal of all DACS devices.

Costs

K.119 BT's good progress demonstrated in the removal of DACS from its network suggests that, at this time, there is no need to raise the benchmark minimum to 33.6 kbit/s and that doing so may not be in keeping with light touch regulation.

K.120 Ofcom considers that setting the higher benchmark speed would only result in relatively minor improvements in overall internet access experience, bearing in mind BT's programme of DACS removal already in place, and that BT's recent line study suggests that over 94 per cent of its narrowband customers already get average speeds of at least 33.6kbit/s.

K.121 Option 3 is expected to significantly increase the financial burden for the designated US providers. BT has estimated the costs of complying with a revised benchmark minimum speed of 33.6kbit/s at £42.5 million. This is almost four times BT's estimated cost of complying with the current 28.8kbit/s benchmark speed.

K.122 In addition, Option 3 would generate additional compliance costs for designated USPs that appear disproportionate compared to the benefits to end-users and to the objective Ofcom intends to achieve, namely the protection of the marginal end-users.

K.123 Since the monitoring requirements would be the same as under Option 2, it is expected that the administrative costs (including those generated by monitoring activities) would be similar to those under Option 2.

Option 4 Removal of Guidelines

Benefits

K.124 This fourth option may be considered to contribute to one of Ofcom's regulatory principles, which is to operate with a bias against regulation.

Costs

K.125 Given the relatively recent introduction of FIA as a regulatory concept, Ofcom considers that Option 4 would not create an optimal environment for effective implementation of the requirement to ensure FIA.

K.126 Removing the Guidelines would almost certainly lead to a poorer understanding by stakeholders of the respective rights and obligations in respect of FIA.

K.127 It is possible - perhaps even likely - that, without the Guidelines, FIA would not be provided to the standard envisaged by Ofcom, resulting in consumer detriment. The Guidelines encourage designated USPs to make improvements to their narrowband networks and to deal positively with complaints about internet access speeds.

K.128 It is not clear to what extent Option 4 would generate a different level of cost for the designated providers. This would depend on how providers would implement the obligation to ensure the provision of FIA without interpretative guidance from Ofcom, for example the benchmark minimum of 28.8 kbit/s.

K.129 Ofcom supports option 2 because it provides an opportunity to improve benefits to consumers. Whilst the key aspects of the Guidelines would remain unchanged, the Guidelines would be revised to help monitor the obligation. This will benefit users without creating a disproportionate burden upon BT. Indeed, transparency would be increased for all and it is anticipated that Ofcom's costs of monitoring would be low. In addition, many users appear not to know about the benchmark minimum speed; re-issuing the Guidelines may increase consumer awareness.

Section 3 and section 4 analysis

K.130 Ofcom has considered its duties under section 3 of the Act and all the Community requirements set out in section 4. Option 2 furthers the interests of citizens in relation to communication matters and of consumers in relevant markets by ensuring that functional internet access is provided in accordance with transparent and consistent guidelines. It is proportionate in that it applies only to BT as a designated USP. It also promotes the interests of all persons who are citizens of the European Union because it ensures that functional internet access is provided in an appropriate manner.