

OfTel

Office of Telecommunications

Competition in the provision of fixed telephony services

*Consultation document issued by the Director General
of Telecommunications*

31 July 2001

**Office of Telecommunications
50 Ludgate Hill
London EC4M 7JJ
Tel: 020 7634 8700
Fax: 020 7634 8943
www.oftel.gov.uk**

© Crown Copyright 2001

Contents

Summary	iii
Chapter 1 Introduction	1
Chapter 2 Defining the Relevant Markets	4
Chapter 3 Key Competition Indicators and Preliminary Views	17
Chapter 4 Consultation Details	40
Glossary	42

Summary

S1 Oftel's goal is the best deal for consumers in terms of quality, choice and value for money. Competitive markets are the best way of achieving this goal. Price control is a means of protecting consumers in retail markets where competition is ineffective now and is likely to continue to be ineffective in the immediate future. Since 1984, price control has taken the form of placing a ceiling – or a cap – on the extent to which BT can raise prices for selected services.

S2 In February 2001, Oftel published the Statement *Proposals for Network Charge and Retail Price Controls from 2001*. Oftel concluded that retail price controls on BT should be extended for the period 1 August 2001 to 31 July 2002. While recognising that competition was increasing in the provision of basic telephony services, Oftel did not believe that competition alone would provide protection for all customer groups. The extension of the price control was to allow Oftel time to further review the extent of competition in basic telephony markets and to assess whether further controls or other measures are needed beyond July 2002.

S3 The current retail price control restricts annual increases in the average price of a group or 'basket' of services to the rate of inflation (RPI) minus 4.5%. The services controlled are connections, line rentals, local, national and international calls and operator assistance. Oftel calculates the relative weight of each service within the basket by looking at the expenditure patterns of the lowest 80% of residential customers by spend. This means that the control focuses price changes on services used largely by lower spending customers

S4 BT is subject to a separate control on its retail retention on calls to BTCellnet and Vodafone (that is, the control applies to the price net of the outpayment made to the mobile operator). This control is set at RPI-7% and is also set to end on 31 July 2002.

The review process

S5 This document begins the further review of competition in the provision of basic telephony services. In the first instance, Oftel needs to define the relevant markets. Oftel can then begin to explore whether competition is the main influence on BT's pricing behaviour. In this consultative document Oftel has defined the relevant markets and given its preliminary views on competition in those markets. Oftel plans to issue a consultative document at the end of the year with proposals for future consumer protection arrangements – if they are needed – and a statement setting out its conclusions and final proposals by June 2002. This statement will include the licence modifications needed to give effect to Oftel's proposals.

S6 If the review finds that competition is acting as the overall constraint on the prices of BT's services, price controls would not be required. However, if Oftel concludes that competition is not acting as a constraint, further price controls or other measures to stimulate competition might be required. The measures could include, for example, requiring BT to provide cost-based access to service providers or reviewing the way in which wholesale services such as calls and access and carrier pre-selection are provided by BT.

S7 Oftel requires input from stakeholders to help it to assess the competitiveness of basic telephony markets in the UK. Respondents are encouraged to provide any data that they believe is of relevance to this market review.

Defining the relevant markets

S8 In order to assess whether competition is effective in any market, and is thus protecting consumers, it is necessary to define what constitutes the relevant markets. Oftel's view is that the following services are in separate markets:

- Access;
- Local calls;
- National calls;
- International calls by country pair;
- Calls from fixed to mobile; and
- Operator assisted calls.

Key indicators and preliminary views

S9 In *Implementing Oftel's Strategy: Effective Competition Review Guidelines*, August 2000, Oftel set out twelve indicators it uses when assessing whether competition is effective in any market. This document gives Oftel's initial view on the extent of competition in the relevant markets using those indicators. The overall picture at this stage is one in which competition is increasing and this is shown by prices increasingly moving towards costs, and consumers' views and behaviour. However, it is Oftel's view that competition may not be fully effective at present.

S10 To assess whether action is needed beyond July 2002, and if so in what form, Oftel intends to examine and invites views and evidence on, amongst other things:

- how far customers are benefiting from competition and have access to the information needed to make effective choices between operators;
- barriers to entry;
- the extent to which BT's prices are likely to be constrained by existing and new competition;
- the framework for the competition analysis; and
- how the indicators should be interpreted within the overall market assessment.

Chapter 1

Introduction

Retail Price Controls

1.1 Oftel's goal is the best deal for consumers in terms of quality, choice and value for money. Competition – rather than regulation – is likely to ensure that operators increase efficiency by reducing costs whilst still innovating and meeting customers' requirements.

1.2 Retail price controls should be used only where competition is ineffective and is likely to remain that way. In a competitive market, competition would act as a pricing constraint on all players in that market. Price controls would not therefore be necessary. However, price controls may be appropriate if there is insufficient competition to provide a competitive constraint on prices.

1.3 BT is currently subject to retail price controls that are focussed on the bottom 80% of its residential customers by expenditure and are set at RPI-4.5%. This control is set to end on 31 July 2002. The control is focussed on the bottom 80% of residential customers by expenditure because when Oftel implemented the controls it believed that these consumers were benefiting the least from competition. The price controls limit increases that BT can make for the following group of services (the price control "basket"):

- Access (connection, take-over and line rental);
- Local calls;
- National calls;
- International calls; and
- Operator assisted calls

1.4 Within the 'basket' control, BT chooses how it wishes to meet the overall control subject to the provisions of normal competition law.

1.5 In addition, BT's retention for calls to BTCellnet and Vodafone are subject to controls set at RPI-7%. These controls are also set to end on 31 July 2002.

Market review

1.6 This document begins Oftel's review of competition in the provision of basic telephony services. In the first instance, Oftel needs to define the relevant markets. Once Oftel has defined the relevant markets, it can begin to explore whether competition is the main influence on BT's pricing behaviour. This consultative document gives Oftel's views on the relevant markets (Chapter 2) and its preliminary thoughts on competition in those markets (Chapter 3).

1.7 Oftel has to decide whether competition is protecting all groups of customers or whether further price controls are required after the present control ends on 31 July 2002. If competition is protecting all consumers, it will not be necessary for price controls to continue beyond July 2002. Conversely, if competition is not protecting consumers, Oftel has to identify those groups of consumers that are not benefiting from competition and decide what

the best form of protection for them would be. Oftel could protect consumers either by proposing that price controls should continue or it could attempt to stimulate competition further by, for instance, opening up access to BT's network to systemless service providers. Alternatively, Oftel might find that it is not necessary to increase regulation in this manner because services such as calls and access and carrier pre-selection provide a strong competitive constraint. The threat of competitive entry to the market combined with actual entry might, on its own, provide consumers with adequate protection by constraining BT's pricing flexibility. On the other hand, it might be necessary to introduce a combination of price controls and encourage competition still further.

Relationship with other Oftel projects

1.8 This review will also take account of the outcome of other work underway in Oftel.

1.9 In March 2001, BT asked Oftel to review regulatory obligations in relation to all retail international direct dial (IDD) routes that are not currently deemed to be competitive. BT believes that competition is effective on all retail IDD routes and that the obligations should be removed. Oftel aims to publish proposals for consultation in September 2001 and complete this review by December 2001.

1.10 On 28 June 2001, Oftel published the consultative document *BT's regulatory obligations to provide advance notification of price changes and to maintain a published price list*. This document considers whether the requirement for BT to give twenty-eight days' notice before it can change any of its retail prices remains appropriate. This requirement allows BT's competitors an opportunity to put in competitive responses to BT's price changes. However, there is some concern that this might lead to price leading on BT's part and price following on the part of its competitors; BT's consequent loss of first mover advantage may discourage it from attempting to compete on price. In some instances, advance price publication may even facilitate the maintenance of collusive practices. This would not be in consumers' interests. Oftel is therefore considering whether these requirements remain appropriate and are in consumers' interests.

1.11 In its review of the Universal Service Obligation, Oftel has been assessing whether the placing and funding of the obligation represented an unfair burden on BT. Oftel has explained that, in determining this, it would take into account the extent to which BT is unable to recover its costs of serving uneconomic customers from the profit it makes from economic customers. Oftel has indicated that, given BT's current return on capital for basic services, it is unlikely that any net cost of meeting the obligation within the range of estimates made to date would be seen as an unfair burden. Oftel will consider the implications of the outcome of this Market Review for its policy on assessing the net cost of the obligation.

Effective competition indicators and data requests

1.12 At the end of Chapter 2, Oftel has set out the key indicators of effective competition that it is to consider in assessing whether competition in the provision of retail telephony services is or is not effective. These follow the framework set out in *Implementing Oftel's Strategy: Effective Competition Review Guidelines*, August 2000. This document sets out Oftel's initial assessment of competitiveness based on these indicators. It also sets out Oftel's data requirements.

1.13 Oftel already has a significant amount of data following the earlier review of competition in the provision of retail services. However, this data need updating. Oftel wishes to receive updated data and other comments on what further information it requires to accurately gauge the nature and extent of competition in retail telephony markets. Such information will help to inform Oftel in its view on whether competition in the relevant markets is or is not effective.

Timetable

1.14 The data that Oftel has sought through this document, and on which it will base its proposals, need to be sufficiently robust to provide an accurate picture of competition in basic telephony markets. Oftel will therefore seek views informally – through an industry workshop and other meetings – in the autumn on the relevance and accuracy of the data that it receives. Thereafter the Director General will consult on his proposals for future arrangements – whether this is for further price cap arrangements or for the end of such controls – by December 2001. Oftel’s final proposals and, if necessary, the draft licence modifications to give effect to them will be set out in a statement to be published by no later than June 2002.

1.15 In the event that BT objects to the proposed licence modifications, the Director General may make a reference to the Competition Commission asking it to investigate whether his proposals were in the public interest. The Director General may express his views in any reference on the adverse impact on the public interest if regulatory action is not taken, and specify any licence modifications he considers appropriate in order to remedy such adverse impact. Whilst the Competition Commission was undertaking its investigation, the present controls would continue for one further year to 31 July 2003. Oftel can extend the controls for the additional year in this way by invoking Condition 74B of BT’s licence (‘Rollover of General Price Controls’). This condition can be invoked only if BT has not accepted Oftel’s proposals to modify its licence.

Consultation

1.16 Oftel is seeking views of consumers, their representatives and the industry and data on competitive pressures that show how far consumers are benefiting from competition. Comments are also welcome on the interpretation of data, for example on how survey responses can be combined with more quantitative information. Responses to the consultation are sought by **2 October 2001**. Thereafter there will be a further 2-week period in which comments can be made on responses received following the first period of consultation.

Chapter 2

Defining the Relevant Markets

Market definition

2.1 The extent of competition in the provision of services will decide whether price controls or other action is required to protect consumers. If competition in the provision of the relevant services is effective price controls will not be required. However, if competition is not effective, Oftel will need to ensure that consumers are protected against potentially exploitative pricing.

2.2 Generally, there are two sequential stages involved in competition analysis: an assessment of the relevant market for the particular product followed by an assessment of the market power held by the supplier(s) of that product. Thus, the assessment of competitive pressures faced by the suppliers is preceded by the definition of the relevant market. This Chapter is concerned with market definition.

2.3 Oftel's approach to market definition follows that used by the UK competition authorities and is in line with those used by European and US competition authorities. Market boundaries are determined by identifying constraints on the price-setting behaviour of firms. There are two main competitive constraints to consider: how far it is possible for customers to substitute other services for those in question (demand-side substitution), and how far suppliers could switch, or increase, production to supply the relevant products (supply-side substitution) following a price increase.

2.4 The concept of the 'hypothetical monopolist test' is a useful tool to identify close demand-side and supply-side substitutes. A product is considered to constitute a separate market if a hypothetical monopoly supplier could impose a small but significant, non-transitory price increase without losing sales to such a degree as to make this unprofitable. If such a price rise would be unprofitable, because consumers would switch to other products, or because suppliers of other products would begin to compete with the monopolist, then the market definition should be expanded to include the substitute products. However, the relevant market is not necessarily the smallest which it is possible to define using the hypothetical monopolist test. It may be appropriate to include, in the relevant market, a number of products, in the supply of which competitive conditions are homogeneous.

2.5 In defining a relevant market, it is usual to begin with a fairly narrow view and then expand that market to include the relevant substitutes. A natural starting point for an analysis of the need for further retail price controls would be to consider whether each of the services included in BT's retail price cap, as well as calls to mobiles, could be considered a separate market. This would be consistent with the approach taken in the previous review of BT's retail price controls in 1996 and reaffirmed in Oftel's first consultative document of the current review *Price Control Review: Future developments in the competitiveness of UK telecommunications Markets*, July 1999. This means that Oftel needs to consider the following services:

- Access;
- Local calls;
- National calls;
- IDD calls (by route);
- Operator assisted calls; and
- Calls to mobiles.

A similar analysis would be necessary for any other service proposed for inclusion in the retail price cap.

2.6 Market definitions may change over time and therefore it is important to consider again whether the above market definitions remain relevant. In addition, it is important to consider whether competitive conditions in the supply of a service vary by customer group and so whether separate markets should be defined for different customer groups. A key feature of the current retail price control is that the weight of each service in the price control basket reflects the expenditure patterns of the lowest-spending 80% of residential customers, on the grounds that these were the group of customers for whom competition was least well developed. The appropriateness of this segmentation will also be reviewed in the light of competitive developments.

Access

2.7 From the consumer's point of view, access can be thought of as the ability to make and receive calls. The price of access is composed of the line rental, connection and take-over fees, for which the customer receives an exchange line connecting their premises to the operator's local exchange.

2.8 If a hypothetical monopoly supplier of access increased its price, consumers wishing to use fixed telephony services would consider switching to available substitutes. The most obvious potential substitute is mobile access. Oftel has considered whether fixed and mobile telephony are substitutes on a number of occasions, most recently in its *Effective competition Review: Mobile*, February 2001.

2.9 In that document it was concluded that fixed lines would not be an adequate substitute for mobile services since the former are linked to a particular geographic location. The focus of the *Effective competition Review: Mobile* was on whether the availability of fixed telephony acted as a constraint on the price of mobile services. The issue here is whether the availability of mobiles constrains the price of fixed access, though much of the evidence set out there is equally relevant.

2.10 Oftel survey evidence suggests that UK fixed line penetration of residential households may have reached a peak of 95% between 1997 and 1999 but has since fallen back to 93%. Of the 7% of homes without a fixed telephone, nearly 90% (equating to about 6% of households) use mobile services as an alternative to the fixed network. However, the rapid rise in numbers of mobile subscribers has largely been reflected in an increase in the number of households with both fixed and mobile phones. The number of such households as a proportion of the total rose from 60% to 72% between May 2000 and May 2001 whereas the proportion of mobile-only households was relatively stable at around 5% - 6%. This suggests that mobiles are seen by most customers as a complement to the fixed line rather than as a substitute for it. This is supported by evidence from Oftel's April 2001 survey of adults with

both a fixed and a mobile telephone (note that, although Oftel conducts regular surveys, not all questions are repeated each time, so that the most recent data on a particular issue may not come from the most recent survey). Some 29% said that they would never completely replace their fixed telephone with a mobile whilst, among the remainder, the average increase in the quarterly fixed bill which would be required to induce a switch entirely to mobile was 102%.

2.11 One reason may be that, even if access and calls are regarded as separate markets, there is a 'buy-through' in that a customer cannot purchase calls without first purchasing access and, in particular, a customer cannot purchase fixed calls over a mobile network. A customer who used a mobile telephone instead of a fixed line would therefore pay mobile call charges and, for most users, these charges would be a major consideration in deciding whether to switch from a fixed line to a mobile. As noted in *Effective Competition Review: Mobile*, February 2001, mobile call prices remain significantly above those from fixed lines, particularly at peak times. Oftel's analysis suggests that, for comparable packages, mobile prices still exceed BT's prices by between 24% and 55%. In addition, mobile calls are dropped more often than fixed calls and the quality of speech is poorer, though survey evidence suggests that these differences may not be significant for the majority of customers.

2.12 Some customers may wish to have a telephone for incoming calls or emergencies only and, for these customers, a comparison based on access costs alone may be relevant. BT's standard line rental is £9.99 per month including VAT. This also includes £1.80 worth of calls.

2.13 The price of mobile access depends on whether the customer opts for a monthly contract, a pay-up-front annual fee, or a pre-pay package. The lowest available monthly rental is about £9.99 (including 20 minutes call time). However, customers who want the ability to receive calls anywhere may favour a pre-pay package, which until recently were widely available for a one-off fee of about £39.99 (and even this may have been reduced by special offers) subject to a (negligible) minimum usage requirement. At this price, over a period of a year or so a pre-pay mobile may have worked out cheaper than a fixed line if no calls were made. However, anecdotal evidence suggests that the main value of low- or no-use mobile pre-pay packages is as a complement to the fixed line, for customers who value the ability to be contacted or to make emergency calls anywhere, but who make most of their calls over the fixed line. In addition, recent price rises have reduced the attractiveness of such packages relative to a fixed line. In any case, the number of BT customers using their BT fixed line for access only is proportionately very small.

2.14 On the supply-side, the relevant consideration is whether a firm without a fixed local access network could enter the market and develop its own network. Amongst existing network operators, potential candidates would be mobile operators and those operators with long-distance transmission networks (who may provide calls using indirect access (IA)). In both cases, however, the operator would need to incur significant fixed costs to develop a local access network. Given that a large proportion of these costs are likely to be sunk (not recoverable on exit), entry barriers are likely to be significant. Moreover, the process of installing local access infrastructure is time consuming and this also suggests that supply-side substitution is unlikely to be possible within the timescale relevant to the hypothetical monopolist test.

2.15 Retail access provision is also possible for operators without their own networks by means of BT's Calls and Access product or Local Loop Unbundling (LLU). For the purposes of this review, Oftel proposes to consider these as examples of entry into retail markets rather than supply-side substitution. Their impact is discussed further in Chapter 3.

2.16 Oftel believes that fixed access is currently a separate relevant market.

Geographic extent of the access market

2.17 At first sight, it might appear that the access market should be divided into local areas, for example, cable franchise areas. A consideration of the potential for demand-side and supply-side substitution suggests that the potential for either of these factors to constrain local line rental or connection charges is limited. On the demand-side, fixed access in another area is unlikely to be an acceptable substitute for a line at the home address, whilst the entry barriers described above, together with licence restrictions, are likely to limit the scope for supply-side substitution by an operator in one (franchise) area into another.

2.18 However, whilst there may therefore be differences in competitive conditions between regions, BT's charges for access are geographically uniform. This means that any response to competitive pressure in one area in the form of lower prices would apply throughout the country. This suggests that, for the purposes of the price control review, the geographic extent of the relevant market should be regarded as being the whole of the UK.

2.19 Oftel believes that the market for access is currently national in scope.

Calls markets

2.20 In the last section, it was concluded that supply-side substitution by providers of calls without their own local access network (that is, IA and CPS operators) would not constrain the price which a monopoly provider of local access could charge for access. However, an operator with a local access network will certainly be able to provide at least calls between customers connected to the same concentrator, i.e. the part of the local exchange which is positioned closest to customers, and typically such an operator will supply the full range of call types including national and international calls and calls to mobiles, using interconnection with other networks where necessary.

2.21 However, Oftel believes that calls markets should be regarded as separate from the market for access. This is because competitive conditions are not homogeneous between calls and access and a single market definition would therefore obscure the analysis of the extent of competition. In particular, the ability of IA operators to offer calls, including increasingly local calls, without themselves possessing a local access network means that entry barriers into the provision of calls are much lower than into the provision of access and suggest that calls markets are likely to be more competitive.

2.22 Oftel believes that calls markets should currently be regarded as separate from access.

Geographic extent of calls markets

2.23. As with access, BT's retail prices for calls are geographically uniform. Furthermore, some of the suppliers of calls to customers in one part of the UK would find it relatively easy to supply such services to customers in another area in response to a price increase in that area. IA operators may use their own long-distance networks and buy in wholesale call origination and termination from direct access operators. Supply side substitution between areas exists for IA operators, given the availability of wholesale origination and termination throughout the UK (at geographically uniform charges in the case of BT). The geographic extent of the relevant market for calls is, therefore, the whole of the UK.

2.24 Oftel believes that calls markets are currently national in scope.

Fixed-Mobile substitution

2.25 In considering whether a call from a mobile to a fixed line or to another mobile is an adequate substitute for a call from a fixed line, a number of issues arise. Firstly, substitution is more likely if the caller already has a mobile (as noted above some 72% of households have both fixed and mobile phones), and therefore base their decision on the marginal call price. For the reasons given in paragraphs 2.9-2.11, it may be difficult to persuade customers who have a fixed line to replace it with a mobile, especially if they wish to use it for data applications. However, it may be relatively easy to persuade customers who have both a fixed and a mobile to switch between them by price differentials. According to Oftel's February 2001 survey of residential consumers (the last in which this question was asked), about two thirds of those with both fixed and mobile phones find occasions on which they do substitute mobile usage for fixed usage. This means that just less than one third are not substituting mobile usage for fixed to take advantage of lower prices at certain times, or for convenience. In addition, 21% have a fixed telephone only. The question then is whether this extent of substitution is sufficient to constrain the prices of fixed calls.

2.26 The size of the price differential depends on a number of factors including whether the caller's mobile tariff package provides an allowance of 'free' calls in return for a fixed fee. Where the users purchase an allowance of free calls with their subscription, the marginal call price may be regarded as zero and this may encourage use of the mobile in preference to the fixed phone. However, the possible scale of substitution of calls from the fixed line may be limited if the allowance of free calls is small relative to the volume of fixed line calls. In addition, whilst some off-peak mobile tariffs are now comparable to BT's charges for calls on the fixed network, in general the price premium for making calls from a mobile suggests that mobile prices do not constrain the prices of calls from a fixed line to another fixed line.

2.27 Another consideration arises in the case of substitution by mobile to mobile calls. This is most relevant for fixed to mobile calls, though not necessarily exclusively so. The size of the price differential then depends on whether the alternative mobile to mobile call is on the same network ('on-net') or on a different network ('off-net'). Off-net mobile to mobile calls are often excluded from inclusive call allowances (ICAs). In general, the strategy of the mobile network operators is to maintain relatively high prices for off-net calls but to offer low prices for on-net calls. Indeed, prices for the latter can be comparable to fixed to fixed prices even outside of call allowances. Substitution is therefore more likely if the potential alternative mobile to mobile call is on-net. The likelihood that a call will remain on-net will reflect the market share of the mobile operator in question, which will currently lie between

20% and 30% depending on the operator. However, it is likely to be higher if the caller is a member of a 'closed user group'. A closed user group can be defined as an identifiable group of people who have an interest in how much it costs to call each other. At present, Oftel does not have sufficient information to draw conclusions on the importance of closed user groups.

2.28 As Oftel argued, in its July 1999 consultative document *Price control review: Future developments in the competitiveness of UK telecommunications markets*, the extent of substitution may increase as the mobile networks expand and evolve to cater for more advanced forms of data transmission and as costs fall. These developments will significantly increase the overall traffic capacity of GSM networks, particularly for voice which will be able to match the fixed networks for quality. Improved quality and lower off peak mobile tariffs may mean that the fixed line will be used increasingly for data traffic while the mobile will increasingly be regarded by some customers as the principal voice communication medium, although enhanced mobile networks will increasingly be able to provide data as well. However, mobile operators' traffic-sensitive costs are expected to remain above those of fixed networks. Consumers may well be prepared to pay some premium for the additional convenience of mobiles but full substitutability of residential fixed lines by GSM is unlikely as long as a significant price premium remains.

2.29 Oftel's May 2001 survey of residential consumers found that 79% of respondents still consider the home fixed telephone as their main method of making and receiving calls. About 15% regard the mobile as their main telephone (the remaining 6% use other methods such as a fixed telephone at work or a payphone). Whilst this was similar to the findings of the February 2001 survey, the proportion of customers regarding their mobile as their main telephone has increased significantly over the last year and Oftel intends to monitor future trends in this figure. Some 70% of these consumers also have a fixed telephone at home.

2.30 Oftel believes that, in general, calls from fixed lines are not currently in the same market as calls from mobiles.

Customer type

2.31 It may be possible to define separate markets for different groups of customers, for example, by distinguishing between business and residential customers, or on the basis of spend levels. This would be consistent with the structure of the current retail price cap, which is focused on the lowest-spending 80% of residential customers (with a safeguard arrangement for small businesses). These are the groups which, in 1996, were considered to have the least access to competition, and the price control was designed to ensure that it benefited those that benefited least from competition and were most in need of protection. However, the 1996 price control review was not always explicit on the question of whether they constituted a distinct market.

2.32 It is, however, clear that competitive conditions were not seen as homogeneous across all customers. The chosen categorisation reflected the fact that the highest spending residential customers had very different usage patterns to the rest of BT's customers. A much larger proportion of the top-spending 20% of residential customers' bills was (and is) spent on international, 'other' (for example, premium rate services) and, to a lesser extent, national call services than for other residential customers. BT made higher returns on these services than for local calls and rental so the high spending residential customers were attractive and

profitable both to BT and its IA competitors, and were therefore already benefiting from competition. In addition, it was noted that if their spending were included in the revenue weights used to calculate compliance with the price control, they would increase the attractiveness to BT of reducing national and international call charges and decrease the attractiveness of reducing local call and rental charges which constitute a large proportion of the bills of low and moderate use customers. This would have resulted in most of the benefits of the price control going to those customers who were least in need of protection.

2.33 The choice of the 80% threshold was also informed by BT's discounting behaviour, which indicated where it considered it faced the greatest threat of competition. In 1995/1996 the threshold at which BT's main discount packages became worthwhile for customers was a call spend approximating to the borderline between the 20% of highest users and the rest of BT's customers.

2.34 In the Decision published in May 2001 following Oftel's Competition Act investigation into the pricing of BT's 'Surf' product within the BT Surf Together and BT Talk & Surf Together tariff packages, it was noted that an argument could be made that residential access is in a separate market from business access, because residential and business customers tend to be in distinct geographical locations. This will reduce the extent of supply side substitution because a supplier of access to business customers would need to incur significant sunk costs and take the time to build out its network in order to compete against a supplier of access to residential customers. Although smaller businesses in particular may be more likely to locate close to their customers, the fact that charges for business and residential access are different would suggest that they do in fact constitute separate markets.

2.35 The argument is slightly less clear-cut in the case of retail calls. For direct access operators supply side substitution appears not to be present, because of the costs and time required to build out networks to the areas in which residential customers are located. Also, like access, different prices tend to be charged to business and residential customers. IA operators and resellers do not face these constraints, because they use existing exchange lines rather than building their own. However, it was argued that the characteristics of residential customers are sufficiently different from business customers to limit the extent of supply side substitution because a supplier of calls to business customers would be likely to need to develop different tariff packages that would appeal to residential customers and because such a supplier might also need to incur significant costs in order to create sufficient awareness and brand recognition in residential customers.

2.36 In addition, there are often fixed subscriber acquisition costs incurred by suppliers to win customers. This might mean that supply side substitution was not present for customers with lower call expenditure, because IA operators currently supplying calls to higher spending customers might not be attracted to provide calls to the lower spending customers by a small but significant non-transitory increase in price on the part of BT.

2.37 The precise boundary between the markets by customer type is open to debate. For example, the highest spending residential customers have call expenditure as high or higher than small business customers; and some small businesses are located in residential areas. Nevertheless, for the purposes of the Surf inquiry, it was concluded that distinguishing residential from business customers is a reasonable approach.

2.38 In the price control review, Oftel will consider the appropriate segmentation by customer group in the light of current and expected future competitive conditions. These findings may also have wider implications. For example, a finding that markets for the provision of basic telephony services to businesses were effectively competitive could mean that other aspects of regulation which apply to BT in these markets could also be relaxed.

Call type

2.39 The next question is whether it is appropriate to treat all call types as part of a single calls market or instead to define separate markets for individual call types, for example along the lines set out in paragraph 2.5. A consideration only of the scope for demand-side substitution suggests that markets might be quite narrowly defined. Indeed, in the limit, it might be possible to define calls to particular individuals as separate markets since, with some exceptions, a call to one person will not be a good substitute for a call to someone else.

2.40 How far supply-side substitution would undermine this very narrow definition depends on whether a potential competing provider of retail calls to a particular person is able to purchase termination of calls to that customer as a wholesale service. Suppose there is a monopolist of retail (end-to-end) calls to one individual, but calls to other individuals are competitively provided. If the hypothetical monopolist of retail (end-to-end) calls to that customer refuses to terminate calls to that customer originating on other networks then supply-side substitution is unlikely. As has been well documented elsewhere, the calling party pays principle means that the called party is unlikely to switch networks if the price of calling him increases, as he will not (usually) bear the cost. However, if other operators are able to purchase termination of calls to the monopolist's customers, then they will be able to offer competing retail end-to-end calls, using their own networks for origination and conveyance as far as the terminating segment. In practice, call termination is available as a wholesale service and therefore a hypothetical monopolist provider of retail calls to one individual would face the prospect of competition from providers of calls to other individuals if it attempted to raise its prices. Hence the possibility of supply-side substitution suggests that a broader market definition is likely to be appropriate. This could be along the lines set out in paragraph 2.5 since, for example, an operator with a local network could be able to offer local calls terminating with all customers in its local area.

2.41 The principle that the extent of the market is determined by the area and services in which competitive conditions are homogeneous is again useful. In practice, operators do not price discriminate on the basis of the identity of the called party. However, differentiation between the prices for local, national, international calls, calls to mobiles etc is however usual. This suggests that a sensible set of market definitions for fixed calls would be those set out in paragraph 2.5. Note however that a distinction between local and national calls has not been drawn in the case of mobile calls, since mobile call prices are generally uniform within the UK and do not vary with distance.

2.42 In the 1996 price control review, Oftel considered whether local and national calls should be regarded as a single market. The main argument advanced in favour of this treatment was the increasing irrelevance of distance as a determinant of the costs of providing call services. However, Oftel decided in the light of responses to the consultation to accept the distinction between local and national calls.

2.43 It could be argued that the case for making this distinction might have been stronger in 1996 than now. IA operators did not then offer local calls because the margin between local call prices and network charges was insufficient to cover the additional switching costs of IA operators and allow an adequate profit. This meant that there was a significant difference in competitive conditions between local and national calls. IA operators are now able to offer local calls profitably and indeed there has been rapid growth in this traffic. There may therefore now be greater homogeneity in competitive conditions than at the time of the last review. This could be reinforced when the 'all calls' option for carrier pre-selection (discussed further in paragraphs 3.75-3.76) becomes available from 2002. However, whilst margins between retail prices for local calls and network charges are currently sufficient for IA operators to offer local calls profitably, this might not be so at the competitive level of prices. The relevant question, then, is whether the threat of re-entry by IA operators would constrain local call prices to the competitive level.

2.44 Oftel believes that local calls and national calls should currently be regarded as separate markets. This market definition is consistent with Oftel's conclusion in its investigation into BT's pricing of 'Surf' within the BT Surf Together and BT Talk & Surf Together tariff packages. It was also noted there that it is unlikely to be critical as BT's market share and profitability in local and national calls are broadly similar.

International calls

2.45 In January 2001, Oftel published the results of its *Review of whether Cable and Wireless has Market Influence on international routes* (the C&W review). In the C&W review, Oftel looked separately at markets for international retail services on a route-by-route basis. Oftel defined that these markets consisted of international retail calls (retail international direct dial and retail calls delivered via international simple voice resale) and, for large corporate customers, international private leased circuits (normally considered part of the market for international services to other operators) insofar as they represent a substitute for international retail calls for such customers.

2.46 The main issue in the case of international calls concerns the geographical definition of the markets at both the wholesale and retail levels. In the C&W review, Oftel considered it appropriate to treat paired country routes as separate markets at both levels, as it has done in previous analysis of international markets. On the demand side, substitution between different country routes is not possible as a call to one country is not a good alternative for a call to another country. Oftel accepts that a degree of wholesale supply side substitution is possible by means of 'hubbing' (the routing of traffic via an intermediate third country), and other forms of indirect transmission such as 'transit', 're-origination' and the use of 'ring' systems. However, for the purposes of the C&W review, Oftel considered it appropriate to examine all individual wholesale routes separately given the difficulty in establishing the extent of indirect routing. Whilst the C&W review also considered it appropriate to analyse retail routes separately, the growing importance of IA operators and re-sellers in retail IDD competition and their potential to offer conveyance services to a wide range of international routes raises the potential for a retail supply side market definition wider than route-by-route. This issue is being considered further in the reviews of competition in retail and wholesale IDD markets requested by BT and Concert. Oftel believes that it should adopt a set of market definitions for the price control review which are consistent with those derived from these reviews.

2.47 Oftel believes that it is currently appropriate to consider country pair routes as individual markets. However, the market definition for the price control review will be consistent with the view that Oftel takes in relation to its review of competition in retail IDD markets, and could therefore evolve.

Operator assisted calls

2.48 The services charged for and currently included in the retail price control are duration charges for operator-controlled calls and facility fees for operator-controlled calls other than when the caller experiences difficulty in obtaining a connection and reverse charge calls (other than from a public telephone box). It is important to distinguish between operator assistance supplied to retail customers and the wholesale operator assistance service supplied by BT to other operators. The latter market is deemed to be competitive since there are no major barriers to an operator self-providing or using other operators' services. Here we are concerned with operator assistance (OA) supplied to retail customers.

2.49 In the last price control review, Oftel took the view that retail OA is an integral part of the telephone service provided by an operator when an exchange line is supplied. It was considered that entry by an independent service provider was unlikely given the costs it would face and the difficulty it would have in persuading customers to switch supplier of a service which was typically a very small part of telecommunications spend. On this basis, it could be argued that operator assisted calls should be treated as part of the market for access, given the likely homogeneity of competitive conditions between the two services.

2.50 Notwithstanding the likelihood that competition to provide OA on a given network may be small, prices for operator assisted calls could be constrained by prices for direct-dialled calls if the latter were seen as good substitutes. However, the significant additional cost (up to £2 per call) involved in making an OA call suggests that calls will only be made via the operator as a last resort, for example to some international destinations where direct dialling is not available, and this is consistent with the low revenue from OA calls. Moreover, the charge for OA has recently increased after a number of years of stability, during which time call prices have fallen significantly. This suggests that the charge for OA is not constrained by the availability of direct-dialled calls and that therefore OA calls should be treated as a separate market or as part of the access market.

2.51 Oftel would be grateful for views on whether operator assisted calls should be regarded as a separate market, as part of the access market or as part of the market for calls.

Calls to mobiles

2.52 Oftel considered the possible markets for calls to mobiles in its *Review of the Price Control on Calls to Mobiles*. However, that document focuses on the position of the mobile operator terminating the call. The issue here is whether there are competitive constraints on the price the originating operator can charge for a call to a mobile phone. The position of the originating (fixed network) operator was also considered by the Monopolies and Mergers Commission (now the Competition Commission) in 1998, as a result of which a price control was imposed on the amount which BT could retain from supplying calls to BTCellnet and Vodafone mobiles at the retail level.

2.53 The most likely demand-side substitutes for a call from a fixed line to a mobile are a call from a fixed line to another fixed line or a call from a mobile to another mobile. The substitution possibilities in the latter case are considered in paragraphs 2.25-2.30.

2.54 It seems unlikely that fixed to fixed calls are a sufficiently good substitute for fixed to mobile calls to constrain the prices of the latter. In general, there is still a substantial price premium for calling a mobile number from a fixed line compared to the price for calling another fixed line, particularly at peak periods. This suggests that the two are not subject to a common pricing constraint.

2.55 The ability to maintain this price premium might stem from the greater probability of immediate contact that comes with calling a mobile compared to a fixed line. There are circumstances in which the difference in the likelihood of obtaining immediate contact is relatively low, for example, when the called party is known to be at home. In this case, the caller may well call the fixed line. On the other hand, if the called party is known not to be at home, the caller will have no choice but to call the mobile if immediate contact is required. The existence of a substantial price premium for calling a mobile suggests that the former circumstances are not sufficiently widespread to make calls from fixed lines to other fixed lines a good substitute for calls from fixed lines to mobiles.

2.56 A further issue is whether at the retail level (ie from the point of view of the BT customer) calls to different mobile networks are in the same or separate markets. Consideration only of demand side substitution suggests that calls to each network seem likely to be in separate markets since, if the called party chooses, for example, Vodafone as his mobile network, the caller has to call Vodafone: a call to BTCellnet is not a substitute. However, as described in paragraphs 2.39 and 2.40, this logic could lead to a very narrow market definition, since a call to any other individual, even if they are on the same network, is unlikely to be a substitute for a call to another. Oftel has concluded, in the context of its review of the regulation of mobile termination rates, that it is reasonable to aggregate the market definition on the demand side at the level of each operator. This is because of the inability of each operator to price discriminate between calls to particular individuals. The competitive constraints are generalised across the customers of a network.

2.57 Consideration of supply-side substitution may suggest a broader market at the retail level. The mobile operators' general provision of wholesale call termination would suggest that, if an operator supplied its customers with calls to Vodafone, say, they would also be able to supply them with calls to the other networks. A hypothetical monopolist supplier of calls to one network would then not be able to raise prices significantly above the competitive level without attracting supply-side substitution by operators initially providing calls to other networks. A further argument in favour of a single market for all calls to mobiles is that competitive conditions at the retail level are likely to be homogeneous between them. Although BT charges different retail prices for calls to the different networks, this may reflect differences in the underlying termination rates paid to the mobile operator.

2.58 Oftel believes that calls from a fixed line to a mobile telephone currently constitute a separate market.

Quantitative analysis

2.59 A number of quantitative techniques exist which, in principle can be used to aid market definition¹. The simpler tests are based on analysis of price trends whilst more complex analyses are based on fitting demand equations. The latter in particular have quite substantial data requirements which may make them difficult to apply in practice.

2.60 A statistical analysis of price correlation can be used to test whether two products are in the same economic market. The underlying rationale is that the prices of products which are in the same market should be closely correlated with each other since they will be subject to the same changes in demand (and possibly costs) and as customers shift between them in response to any price differentials which emerge.

2.61 However, there is no uniquely correct level of correlation which is sufficient for two products to be regarded as part of the same market. In addition, there is the danger of spurious correlation if prices show common trends for reasons unconnected with substitutability. For example, the prices of telecommunications services generally have tended to fall in recent years, reflecting partly declines in the underlying costs of network equipment. In addition, the prices of services which are subject to price control may also tend to move together, reflecting the downward pressure of the control. Any analysis would therefore have to account for these and other common factors influencing the prices of telecommunications services.

2.62 An alternative is to test for ‘Granger causality’ between price series. Despite its name, this is a purely statistical test of association and cannot be used to establish the existence of an economic relationship between two variables. A lengthy time series of data is needed to use the test. As with correlation tests, the effect of common factors must be removed from the data to avoid spurious association. In addition, the methodology is subject to a number of technical problems that can make the statistical test for significance of the association unreliable or hard to interpret.

2.63 More sophisticated analysis attempts to establish whether there is a long-term equilibrium in the relative prices of products that are re-established after a change to the price of one. Again, adjustment for common factors and a long time series of data are likely to be necessary.

2.64 A further drawback with all these techniques is that they rely on an analysis of actual prices, rather than those that would exist if markets were competitive. Actual prices will already reflect any market power possessed by firms in the market and this can lead to excessively broad market definitions by a process sometimes known as the ‘Cellophane fallacy’. This occurs when the price for one good is above the competitive level, because of the exploitation of market power, by a margin sufficient to induce consumers to switch to other products which would not be considered substitutes if the first good were priced at the competitive level (in the eponymous case, the price of Cellophane was raised to a level where other packaging products appeared to be substitutes). An analysis of actual prices can then lead to these other products erroneously being included in the market.

¹ See for example *Quantitative techniques in competition analysis, OFT Research Paper 17, October 1999*

2.65 Oftel believes that the use of quantitative techniques is unlikely to be of significant practical help in defining telecommunications markets.

Retail Price Control review: key indicators

Indicator	Criteria to assess and measures that Oftel proposes to use
Consumer outcome	<p>Whether UK consumers enjoy ‘best or near best deal’ in comparison with consumers in similar economies:</p> <ul style="list-style-type: none"> - compare UK prices and trends with other countries (Oftel survey of PSTN prices April 2001) <p>whether consumers are satisfied with prices and the quality of service they receive:</p> <ul style="list-style-type: none"> - carry out market research on satisfaction <p>whether prices broadly reflect underlying costs (i.e. absence of persistent excessive profits):</p> <ul style="list-style-type: none"> - assess BT’s ROCE data summer 2001 - ROCE by decile and business/residential
Consumer behaviour	<p>whether consumers are able to access information to help make effective choices:</p> <ul style="list-style-type: none"> - Examine number of Phonebills hits - Research customer awareness of Phonebills <p>whether Consumers are confident/ knowledgeable in using information and in taking advantage of market opportunities:</p> <ul style="list-style-type: none"> - Survey awareness of alternatives especially IA and CPS - Analysis of complaints to Oftel, consumer bodies and operators <p>whether there are barriers to consumers switching suppliers:</p> <ul style="list-style-type: none"> - general switching survey - research testing disincentive caused by having two bills - data on numbers switching, numbers porting
Supplier behaviour	<p>whether competition is active in price and quality and innovation:</p> <ul style="list-style-type: none"> - examine pricing trends - check whether BT prices meet or exceed cap - assess BT prices for non-basket customers - consider market share data by access ; revenues; call volumes <p>whether anti-competitive behaviour is absent:</p> <ul style="list-style-type: none"> - examine trends from Oftel Compliance <p>impact of recent entry, considering:</p> <ul style="list-style-type: none"> - number and competitive impact of IA, CPS, C&A and LLU operators - number of exchanges unbundled - cable operator growth - extent of mobile substitution (mobile/fixed penetration surveys)
Structural	<p>whether limited entry barriers make the threat of entry a competitive discipline</p> <p>absence of inefficient suppliers</p> <p>changes in market structure over time, especially a tendency to reduce concentration.</p>

Chapter 3

Key Competition Indicators and Preliminary Views

Initial Assessment of Competition

3.1 In Chapter 2, Oftel set out the market definitions which it considers are most appropriate for the analysis of the extent of competition facing BT in the provision of retail fixed telephony services. In this chapter, Oftel outlines its initial assessment of the state of competition in these markets. It must be emphasised, however, that this is only a preliminary examination, based on the information currently available to Oftel, and the primary aim of this document is to invite the views of interested parties. These, and further information as it becomes available, will inform Oftel's decision on the need for further retail price controls after the expiry of the current (extended) control on 31 July 2002.

3.2 The following sections are structured according to the key indicators of effective competition set out at the end of Chapter 2. These follow the framework set out in *Implementing Oftel's Strategy: Effective Competition Review Guidelines*, August 2000. The indicators are a mix of quantitative data, for example on market structure and profitability, and qualitative data, for example on customer awareness of alternative operators. Oftel will take both into account in its assessment of market competitiveness. In particular, the more qualitative information may help in the interpretation of the quantitative results.

Consumer outcomes

Whether UK consumers enjoy 'best or near best deal' in comparison with consumers in similar economies

3.3 Competition places pressure on firms to price at levels closely related to costs and to keep such costs to a minimum. But it is not always easy to observe costs directly or to discover if they are being minimised. An alternative source of evidence on whether prices in the UK are as low as they would be in competitive markets is by comparing them to prices for the equivalent services in overseas markets. If UK fixed telephony markets are competitive, one would expect UK consumers to be getting a deal which is as good as or better than that available to customers in similar economies overseas. For this reason, Oftel has undertaken a series of surveys to compare UK prices and trends with those in other comparable countries. However, such comparisons are subject to caveats because international comparisons are themselves prone to a number of difficulties. These are outlined below along with the way in which Oftel has sought to address these.

3.4 Firstly, the results may be vulnerable to exchange rate fluctuations. This is usually addressed, as in the Oftel survey, by converting to a single currency at 'purchasing power parity' exchange rates. Comparisons may also depend on the interaction of the pattern of use assumed with the tariff structure used for the comparison. Usage patterns tend to adapt to the structure of prices, with customers naturally tending to make more calls when the prices they face are relatively low. This means that comparisons tend to favour the country whose traffic profile is used as the basis of the comparison. Results may also differ as between large and small users, or depend on the mix of peak and off-peak, or local and long-distance calls. Oftel has sought to address this by using a range of different usage profiles and by reflecting

the variety of packages and discount schemes offered by operators in each country. The usage profiles cover different levels and patterns of usage and are not specific to the UK. Unit-based charges may still be used by some overseas operators, which can disadvantage operators who use per-second pricing unless adjusted for in the comparison. However, after investigation, Oftel has concluded that unit based charges (or other details such as minimum call charges etc) do not have a significant effect on the results. In addition, the quality of service and the extent of network coverage may not be readily comparable between countries. It has not been possible to draw any meaningful conclusions regarding quality of service because of the absence of comparable data between countries, although network coverage is comprehensive in all the survey countries. Lastly, overseas markets may themselves not be effectively competitive and prices in them may therefore be above competitive levels.

3.5 Oftel's survey attempts, as far as possible, to make fair comparisons between prices for fixed telephony services in France, Germany, Sweden, the UK and the USA. A range of usage profiles, reflecting consumption by residential customers and small and medium-sized (but not large) businesses, was used for the comparisons, which focused on both the lowest prices available in each country and the spread of prices.

3.6 The 2001 survey found that PSTN price levels for UK residential consumers generally compared favourably with prices elsewhere. However, they were found to be on average about 10% above the cheapest country (Sweden). France and Germany were more expensive than the UK as were the two US states in the survey (though California was very close to the UK average).

3.7 Price dispersion can be seen as an indication of the extent to which some operators are able to maintain prices above others and hence of market competitiveness, although it may also reflect other factors such as variations in quality of service. All the Swedish operators in the sample tended to have relatively low prices, whilst this was normally true of only 2 or 3 of the UK operators. The range of prices available was therefore narrower in Sweden than in the UK. France also displayed smaller variation in prices whilst dispersion in the US was higher than in the UK.

3.8 Price levels for UK business customers were about average for the sample. They were on average about one-third greater than those in Sweden and 6% higher than in Germany. On average they were similar to those in France and California (although this varied with usage). The range of prices available in the UK appeared similar to that in France and Germany but greater than that in Sweden and the USA.

3.9 The results of the 2001 survey enable trends in prices since the previous survey in 2000 to be compared between countries. UK prices for residential consumers have fallen by about 4% over the year which is broadly similar to the rate of price reduction in Sweden and Germany. Prices fell more rapidly in the US, but increased in France. For UK business customers, the survey suggested that prices had fallen slightly faster than in California, France and Sweden, but not as fast as in Germany and Ohio. Generally, the UK's relative position for both residential and business customers was little changed compared to 2000.

3.10 Because of the approach taken, which was to construct a range of 'baskets' representing different usage profiles and then to price these according to the tariffs available in the survey countries, it is not possible to use the survey to shed light on competition in the individual service markets set out in the previous chapter. However, the basket approach could in

principle provide some information on the degree of competition facing different customer segments. Sweden is significantly cheaper than the UK for all baskets, though less so for some high usage residential customers. Germany and France also appear to be more expensive than the UK by a relatively larger amount for some higher usage residential customers. The UK also appears to do relatively better for medium businesses than for small businesses.

3.11 The existence of a significant price gap between the UK and Sweden suggests that UK fixed telecommunications markets may not yet be effectively competitive, although there is some suggestion that the UK tends to do relatively well in those segments which, a priori, would be expected to be the more competitive. However, it is not possible to draw firm inferences in the absence of an analysis of the reasons for the good performance of the Swedish operators. Summary statistics do not suggest that the structure of the Swedish market is significantly more competitive, with incumbent operators retaining high market shares. Indeed, the UK has by some way the most developed competition in local access provision. Given the relatively short history of competition in France and Germany, it was perhaps to be expected that UK operators would fare better when compared with counterparts in these countries.

Whether consumers are satisfied with prices and the quality of service they receive

3.12 In February and March 2000, a survey was conducted for Oftel to establish the proportion of homes that had switched their fixed telecommunications supplier. The survey attempted to obtain information on the reasons why customers switched, or did not switch, supplier. Respondents were also asked about their satisfaction with their telecommunications supplier or suppliers.

3.13 The survey found that overall satisfaction with the main telecommunications supplier was high. Some 95% of non-switchers were satisfied overall with their main supplier, as were 92% of those who had switched main supplier, though this proportion fell to 88% among partial switchers (such as IA users). It is interesting that changing supplier does not appear to result in higher levels of satisfaction. However, this does not imply poorer service by the suppliers to which customers have switched, since it is likely to reflect customer expectations. Customers tended to be most satisfied with quality/reliability of service and least satisfied with price. Partial switchers were least likely to be satisfied with the prices charged by their main supplier. These results are supported by similar findings in the small/medium business sector.

3.14 Approximately one quarter of the sample had changed their supplier at some time. The main reason given was cost, followed by wish to take up cable TV. Dissatisfaction with former supplier was the primary reason for switching in only 12% of cases. However, there was some variation by operator and dissatisfaction with former supplier was the main reason among those who had switched to BT. In addition, one of the main reasons given for not switching was satisfaction with current supplier; some 60% of those who had not considered switching gave this as the main reason. This is consistent with findings from other Oftel research.

3.15 Oftel also conducts quarterly surveys of fixed telecommunications usage among residential customers and small and medium-sized businesses. The most recent survey of businesses was in May/June 2001. This also found that overall satisfaction was high at 95%.

Again, satisfaction was highest with reliability of service whilst value for money was less highly rated – though still 80% of respondents expressed satisfaction with these aspects of service. Small businesses were more satisfied overall than medium businesses.

3.16 A survey of residential customers in April 2001 also found high levels of satisfaction. Some 90% of fixed line customers rated their service as good, very good or excellent, somewhat above ratings for mobile and Internet services. About 70% of customers thought their fixed telephone service good, very good or excellent value for money. Similarly, 95% of those respondents to Oftel’s May 2001 survey of residential customers for whom the fixed telephone was the main method of telephony, were satisfied with it.

3.17 The high levels of satisfaction found do not suggest that any lack of competition is harming quality of service. However, equally, it must be borne in mind that the prices and quality of service received by at least some customers reflect the fact that the market is regulated. BT’s retail price control has borne down on prices since 1984 and, whilst quality of service is not explicitly regulated, Oftel has introduced measures, for example, publication of comparable performance indicators, to ensure that high quality is maintained. Nonetheless it is interesting that price was the least satisfactory aspect of main supplier service, and dissatisfaction tended to be higher amongst high-spending customers.

Whether prices broadly reflect underlying costs (i.e. absence of persistent excessive profits)

3.18 As noted earlier, competition puts pressure on firms to set prices close to cost. A firm that tried to increase profits by raising prices above costs in a competitive market would find that it would be undercut by rivals and would lose sales as a consequence. In a competitive market, therefore, one would not expect to observe persistent excess profits above the level needed to attract investment to the industry (this minimum level is given by the cost of capital). Of course, profits may temporarily be above this minimum level, if there is innovation or if there are unexpected changes in demand. But the competitive process would tend to eliminate any excess profits over time.

3.19 In the October 2000 price control review consultative document, Oftel reported a comparison of BT’s rate of return on capital employed (ROCE) with its cost of capital for the last three years. The difference between the ROCE and the cost of capital can be used as an indicator of the extent of any excess profits and hence of the degree of competition in the markets in which BT operates. Table 3.1 was included in the October 2000 document.

Table 3.1 – BT’s Return on Capital Employed

		1998/1999	1999/2000
Access		1.0%	0.2%
Calls			
	Local	78.8%	76.2%
	National	87.4%	74.8%
	International	68.9%	79.4%
Total		23.7%	20.1%

Source: BT

Footnote

Outgoing and incoming traffic is included in the definition of International used above. International call products (e.g. operator assisted dialling, payphones and PCs) are excluded.

3.20 Oftel estimates that BT's cost of capital is about 13.5% (before tax and in nominal terms). Table 3.1 indicates that BT's actual return on capital had fallen between 1998/1999 and 1999/2000 but remained well above the cost of capital with continuing very high returns on calls more than compensating for relatively low returns on access. The persistence of such high rates of return suggested that calls markets were not effectively competitive. Rates of return were similar across the main call types. Comparable data for international calls broken down by route were not available, though some variation is to be expected.

3.21 BT provided Oftel, in confidence, with a more detailed analysis of profitability, separating business and residential customers and breaking down the latter by decile of spend. Given the high rates of return on calls and the low rates of return on access it is not surprising that this shows that the most profitable customer segments are businesses and, in particular, higher spending residential customers. The returns on these customers were significantly above the cost of capital. This is slightly paradoxical since these segments are the most competitive areas of the market and indeed the current structure of the retail price control, with its concentration on the lowest-spending 80% of residential customers, reflects this. This suggests that competition may not yet be effective even for higher spending residential and all business customers.

3.22 It should also be borne in mind that BT's overall rate of return reflects the effects of successive price controls which have been set with the intention of reducing BT's ROCE to the cost of capital by the end of each price control period, except to the extent that BT is able to reduce costs faster than forecast. An observation that BT no longer made excess profits on residential customers as a whole, for example, would not then necessarily imply that the market for supply to such customers was competitive. If controls were removed, it is possible that prices, particularly to lower users, could rise.

3.23 The trend in profitability may give an indication of whether competition is intensifying. The figures in Table 3.1 reflect performance in the year as a whole and do not allow trends within each year to be identified. Comparable figures for 2000/2001 are not yet available. However, some indication of likely trends in profitability can be gained from BT's preliminary fourth quarter and annual results for 2000/01 which were published on 10 May 2001 and from those for the first quarter of 2001/02 which were published on 26 July 2001. The 'financial highlights' of BT's 10 May press release stated that underlying group earnings before interest, tax, depreciation and amortisation (EBITDA) were broadly maintained in the fourth quarter and the full year 2000/01, with 'satisfactory' performance from the UK business. Group EBITDA in 2001/02 Q1 was also maintained at the same level as in the corresponding quarter of 2000/01 whilst EBITDA in BT Retail, which includes retail price capped services, increased, as did EBITDA in Future BT which includes both BT Retail and BT Wholesale. Press reports suggested that the 2000/01 results had been slightly worse than market expectations, with shares falling 7%. However, it was reported that this reflected news of more problems in Concert as well as cancellation of the dividend, uncertainty over future restructuring plans and the apparently unexpected write-down of goodwill in Viag (which resulted in a paper loss for BT). BT's share price hardly moved on the announcement of the 2001/02 Q1 results. This does not, on the face of it, suggest that competition is biting very hard at the moment in the areas covered by the retail price control. On the other hand, BT's press releases suggest that the volume of BT retail local, national and international calls is falling. As a result, Oftel would expect a significant reduction in BT's end to end ROCE

by the end of the current price control period. However, it also seems likely that it will remain above the cost of capital.

3.24 Oftel intends to examine, and would be grateful to receive, evidence of how far customers are benefiting from competition. This could include price comparisons with competitive markets overseas, evidence of customer satisfaction and evidence of how prices relate to costs.

Consumer Behaviour

Whether consumers are able to access information to help make effective choices

3.25 If a market is to operate effectively, consumers must be able to exercise choice between operators on the basis of reliable information about prices and other aspects of service. For example, if consumers do not know that lower prices are available elsewhere, they may be unlikely to switch away from their current operator, and that operator may as a result be able to maintain prices above the competitive level.

3.26 A survey of residential customers in May 2000 found that only 18% of respondents felt they had sufficient information to decide the best telecommunications supplier and tariff for them. The March 2000 survey (see paragraph 3.12) found that better information sources were the main factors that consumers said would make switching easier. Over half of those who had changed their telecommunications supplier said that easier and more independent price comparisons would have made the process easier.

3.27 Concern that customers did not have the information necessary to make informed choices led to the setting up in December 1999 of the 'Phonebills' website (www.phonebills.org.uk) by a group of operators (BT, Cable & Wireless, Eurobell, NTL and Telewest, though others have since joined), with the support of Oftel and consumer groups. The website helps users to find the cheapest operator for them, by selecting from a wide range of 'typical' telecommunications usage levels and given the area in which they live.

3.28 The impact of the availability of 'Phonebills' on competition will depend on how far customers are aware of its existence and make use of it. Oftel has therefore sought survey evidence on consumer awareness of 'Phonebills'. However, it is worth noting that customers do not necessarily have to use it themselves to benefit; it may be that the site allows better informed price comparisons to appear in magazines and other publications. In addition, switching by a relatively small 'informed' proportion of customers may be sufficient to provide a competitive constraint on prices, which then benefits informed and uninformed consumers alike.

3.29 A survey of households conducted at the beginning of March 2001 found that 7% of respondents had heard of or seen the 'Phonebills' website. At first sight, this may appear to be a rather small proportion, especially as not all of those aware of the site may actually use the information. However, given that the website was set up only relatively recently, it is probably in line with or better than expectations. It is comparable to awareness levels for other similar sites or publications; for example, the same survey found that only 5% of respondents were aware of the existence of Comparable Performance Indicators (quality of service statistics for various operators) which have been published for rather longer. It is also broadly in line with other survey findings. For example, a third of mobile customers

surveyed by Oftel in August and September 2000 did not use any information sources to help them select their mobile. Amongst those who did take advice, by some way the most popular source of information (used by 28% of respondents) was family or friends, as an earlier survey of fixed telecommunications also found.

3.30 The availability of sources of comparative information such as 'Phonebills' at least means that customers now have the ability to make well-informed choices between operators. However, survey evidence suggests that customers generally still feel that they do not have adequate information available to them and that only a minority of customers are likely to make use of 'Phonebills'. Whether this minority is substantial enough materially to increase competition between operators is not clear. This and other qualitative information from surveys can however help to interpret other more quantitative indicators in order to establish the competitiveness of markets. Oftel is continuing to investigate the scope for action to make 'Phonebills' more effective. It is also considering whether any regulatory action is appropriate in relation to supporting the further development of third party price comparison services.

Whether consumers are confident/knowledgeable in using information and in taking advantage of market opportunities

3.31 Customers must know of alternatives to their main supplier of telecommunications if competition is to be effective. Respondents to the Oftel surveys referred to above were asked to indicate their awareness of alternative telecommunications providers, particularly IA operators.

3.32 Oftel's May 2001 survey of residential consumers found that 55% of fixed line customers were aware of IA operators. This was a higher proportion than in previous surveys, which suggested that only around a third of respondents were aware of IA suppliers. However, caution should be applied before interpreting this as an improvement in awareness as the question in previous quarters asked whether respondents were aware of these suppliers *in their area* rather than awareness of the general availability of indirect operators. As might be expected, awareness is higher amongst higher spenders for whom IA is most likely to be a viable option. The May 2001 survey found that 13% of respondents actually used an IA operator.

3.33 The survey of small and medium-sized enterprises (May/June 2001) suggested that there was greater awareness among businesses than among residential customers. Some 80% of small businesses and 92% of medium businesses were aware of IA operators. Nearly two-thirds of respondents were however using BT as their only supplier.

Consumer complaints

3.34 Another indicator of consumer ability to take advantage of market opportunities is the number and type of complaints to Oftel, consumer bodies and operators. Almost a third of respondents to the February 2001 survey of small and medium-sized businesses had made a complaint to one of their telecommunications suppliers (including mobiles). Of these, only 49% were happy with the way it had been handled. Similarly, a quarter of UK residential customers surveyed in February 2001 had made a complaint to a (fixed or mobile) telecommunications company and one half of those were not at all or not very satisfied with the way it had been handled.

3.35 The number of complaints reaching Oftel increased from 53,150 in 1999 to 119,200 in 2000. However, this is likely to reflect a number of factors rather than increasing dissatisfaction, notably market growth, highly publicised problems including those related to Christmas 1999 mobile sales and internet availability and long lead times for the operators to respond to increasing complaint numbers. Initial information for 2001 suggests that the upward trend has been arrested. The single main cause of complaint is quality of customer service, at just over one quarter of the total, although if all categories of billing and charging related complaints were aggregated, these would also account for over one quarter of the total.

3.36 One might expect the number of complaints in a competitive market to be lower than in a non-competitive market, as the former should ensure that customers benefit from low prices and good quality of service. However, it will also depend on other factors such as the complexity of the product in question. Oftel has therefore compared the number of complaints per thousand telecommunications subscribers per month with figures from other markets. Gas and electricity have been chosen as examples of regulated markets whilst personal computers is intended to represent a technology/consumer electronics product in a competitive, unregulated market. This comparison is shown in Table 3.2.

Table 3.2 – Estimated monthly complaints per 1000 customers or subscribers

	Telecoms	Gas	Electricity	Personal Computers
Complaints received by regulator	0.14 (Oftel)	0.07 (OFGEM)	0.04	-
Complaints received by Trading Standards Officers (per OFT)	0.06	0.03	0.01	0.8
Total	0.20	0.10	0.05	0.8

Sources: Oftel (data for January-December 2000), OFGEM (data for October 2000) and OFT (data for January-June 2000) websites.

3.37 Some caution is needed because the data for these industries may not have been collected in a strictly comparable way. Nonetheless, the data suggest that the average rate of complaints about telecommunications operators is somewhat higher than for energy companies (which is similar to rates achieved by the best-performing large telecommunications operators) but is well below that for personal computers. On the face of it, therefore, the number of complaints generated by telecommunications customers does not strongly indicate that a lack of competition is leading to poor customer service. However, it is apparent that the performance of some operators at least could be improved. In particular, although it is not identified separately Table 3.2, the number of complaints from BT customers per 1000 lines was slightly above average in 2000 whereas in previous years BT had performed better than average.

Whether there are barriers to consumers switching suppliers

3.38 Competition may be impeded if it is difficult for customers to change operators in response to price differences. A market is less likely to be effectively competitive, therefore, if there are significant barriers to customer switching. This may be particularly the case if the market is (initially) dominated by one large supplier and is growing slowly, as entrants will then be able to grow only by attracting customers from the dominant firm. Controls on BT's retail prices are more likely to be necessary if customers find it difficult to switch to competing operators.

3.39 Many markets will have some barriers to switching, for example, due to the prevalence of long-term contracts or supplier-specific equipment. It may also be that a number of barriers specific to telecommunications have discouraged consumers from switching operator. These may include the disruption caused by changing the physical connection between the premises and the network when switching access supplier (eg to a cable company) and the need to pay two bills when using an IA operator. In the past, the need to change number when changing access supplier and the need to dial extra digits when using an IA operator may have been further barriers to switching, but these have now been addressed by the availability of number portability and carrier pre-selection respectively. The evidence summarised below, which draws on Oftel surveys, suggests that the main remaining barriers may relate to lack of awareness both of alternatives and of the true extent of other barriers.

3.40 As noted in paragraph 3.14, approximately one quarter of the sample surveyed in February and March 2000 had changed their supplier at some time, including approximately 6% using more than one supplier (of which 4% were using IA and the remainder BT and cable). This was broadly in line with other markets including mobile telephony, although a little behind gas and Internet provision where about one third of consumers had changed supplier. However, given the longer history of competition in fixed telecommunications, one might have expected the proportion of customers who had at some time changed telecommunications operator to have been relatively high and this may indicate the existence of barriers to switching in fixed telecommunications markets. Two thirds of those who had switched completely had switched from BT to cable. Data from February 2001 suggest that 9% had switched in the previous 12 months.

3.41 Higher users were more likely to have switched. This is to be expected since the savings available are likely to be greatest for those with higher telephone bills. Switching was lowest among those with medium-sized quarterly bills of between £50-£110. This spend level would roughly correspond to the upper end of the current focus of the retail cap, which is on the lowest-spending 80% of residential customers. Consistent with this, consumers who had never considered switching tended to have smaller quarterly bills (less than £70 on average). This is broadly supportive of the current structure of the retail price control.

3.42 Four main reasons were given for not switching: satisfaction with current supplier; inertia/disinterest; perceptions of insufficient savings achievable; and lack of awareness of alternatives. The last three, at least, may be associated with barriers to switching and, in particular, a lack of information about potential savings, about the process of switching and the degree of effort involved and about the existence of competing suppliers.

3.43 Generally, the switching process itself was considered easy by most of those who had switched, though not as easy as switching mobile network or Internet service provider. On

the other hand it was considered easier than switching supplier of gas, electricity, bank and, to a lesser extent, credit card provider. The main perceived difficulties were installation problems and delays and the amount of time and effort required, although a small number reported problems with contracts or other problems with their existing supplier. However, this was not reflected in the factors which most respondents thought would make switching easier in future. Better information was the main requirement and over half of switchers said that more independent price comparisons would have made the process easier.

3.44 Oftel's survey of small and medium-sized business customers suggests that about 20% of the former and 40% of the latter have changed their fixed telecommunications supplier at some time in the past. Again, the majority who have changed supplier found the process easy. However, a significant proportion had difficulty comparing prices (54%) and quality of service (48%).

3.45 The 2000 survey findings suggest that the take-up of number portability is low; only one switcher in five had kept their old number. Most of those who changed number did so by choice. However, a quarter of switchers experienced problems with number portability and would have liked to keep their number but were unable to do so. There also appears to be some lack of awareness that number portability is available. A survey of residential customers in August 2000 found that 2 in 5 respondents were unsure or thought that they would have to change their existing number if they switched supplier. Data from February 2001 suggests that, of the 9% of residential customers who had switched supplier in the last twelve months, 56% had kept the same number. However, only a small proportion of the remaining 44% said that they wanted a new number. The main reason given for changing number was that their new company told them they would have to whilst others were not aware that number portability was possible or were put off by the perceived expense, time or effort involved.

3.46 The 2000 survey does not provide any evidence on the importance of the need to receive two bills as a barrier to the take-up of IA. However, the May 2001 survey of residential customers asked those who were aware of indirect operators but did not use one to say why. Insufficient savings or not making international calls were the main reasons given for not using indirect suppliers, highlighting consumers' perceptions that these companies are primarily for international calls, despite the fact that many now offer savings on a range of call types. Familiarity with brand names, and trusting a company were issues for some consumers, particularly older customers. Billing arrangements were identified as another barrier to take up of indirect suppliers for about 1 in 10 consumers, and included complicated billing (such as having to set up an account and pay a deposit in advance) or having to pay two bills. The May/June 2001 survey of small and medium-sized businesses found that the main reasons for not using IA operators, after satisfaction with current supplier, were the need to dial extra digits and insufficient savings (both mentioned by 10% of the sample). Billing appeared to be less important for businesses than for residential customers, mentioned by only 3% of the former.

3.47 In addition, it may be possible to draw some inferences from experience in Germany. The main relevant features of the German regulatory environment are:

- A low interconnection charge with limited requirements for infrastructure build;
- Deutsche Telekom's (the incumbent) retail call charges above costs; and
- Deutsche Telekom is obliged to bill on behalf of new entrants.

This is similar to the UK with the exception that German IA customers do not have to receive two bills. Perhaps partly as a result, in Germany new entrants have gained market share for long distance and international calls very rapidly. Whilst Deutsche Telekom retains a higher share of access and local call markets than BT, reflecting the comparative lack of infrastructure competition, entrants in Germany have achieved shares of long distance call markets comparable to those in the UK despite a much later start to competition. In addition, the low prices charged by new entrants have forced Deutsche Telekom to respond by cutting its own prices and this has led to very sharp falls in prices for long distance/international calls (tariffs for long distance calls have fallen by 70%), although this may partly have reflected a high starting point. Whilst clearly this evidence cannot be conclusive, the impact of competition in Germany is consistent with the view that the need to pay two bills has restricted take up of IA in the UK.

3.48 A consistent picture is emerging from survey evidence that consumers still do not feel confident that they have adequate information to make effective choices between competing operators. This is supported by evidence of low awareness among households of the 'Phonebills' website and of the range of alternative operators available. Lack of awareness and information also emerges as the main remaining perceived barriers to switching. This might suggest that fixed calls markets are at least potentially competitive, if the issue of awareness can be addressed, though it might also be consistent with a finding that, in general, competition is not yet effective, if this were supported by other indicators. There is some evidence that the need to pay two bills may also be a deterrent to the take-up of IA, and potentially therefore also of carrier pre-selection in the future, particularly for residential customers.

3.49 Oftel will examine, and would be grateful to receive, evidence of how far customers have access to the information needed to make effective choices between operators, how far they are aware of this and how far they make use of it in practice. Oftel will also consider the scale of barriers to switching and how far these reflect lack of information and other factors such as the need for IA customers to pay two operators' bills.

Supplier Behaviour

Whether competition is active in price, quality and innovation

3.50 If competition for customers is active, one would expect to observe prices falling as operators undercut each other in an effort to attract business. However, an observation of falling prices would not in itself be sufficient to establish whether fixed telecommunications markets were competitive because BT is required to reduce prices under the price cap. It is however possible to draw some inferences from the way in which BT has targeted its price reductions, particularly compared to expectations at the time the current cap was set which were reflected in Oftel's financial modelling.

3.51 Table 3.3 shows the nominal price changes which BT has made in its main price controlled services over the period of the current retail price cap. Two figures are shown for access (the line rental), depending on the treatment of the inclusive call allowance (ICA), which allows calls up to a certain value to be made without incurring additional charges over and above the line rental. In the top line, the ICA is treated as a reduction in the line rental, whilst the second line shows the change in the line rental before subtracting the ICA. Note

however that this is for the purposes of illustration and does not imply that the ICA should be regarded as a reduction in the line rental in the context, for example, of competition investigations, where it might be more appropriate to regard it as a reduction in call prices.

Table 3.3

	1997/1998	1998/1999	1999/2000	2000/2001	Average
Access (incl. ICA)	0%	-0.13%	-4.08%	-2.14%	-1.60%
Access (excl ICA)	0%	-0.13%	3.68%	7.27%	2.66%
Local Calls	-2.78%	1.24%	0.32%	-0.03%	-0.32%
National Calls	-6.18%	0.04%	-7.62%	-0.06%	-3.52%
IDD Calls	-1.46%	1.46%	0%	0%	-0.01%

3.52 This suggests that reductions in BT's call prices have been relatively modest over the current price control period. This has meant that, in order to comply with the price control (which applies to a weighted average of call prices, the line rental and connection charges), increases in the line rental have also necessarily been kept to modest levels. By contrast, it was expected when the cap was set that competition would force BT to reduce call prices substantially, offset by relatively large increases in the line rental in order to increase the contribution to common costs made by access as call profits fell. In fact, the rental has barely increased in real terms even if no account is taken of the introduction of ICAs whilst, if the latter are included, it has actually fallen.

3.53 However, significant price reductions have been given in the form of enhancements to discount packages which are not shown in Table 3.3. Nearly 90% of residential customers now benefit from some form of discount package (including LUS). When discounts are included, the rate of reduction in prices appears rather faster as shown in Table 3.4.

Table 3.4

<i>Including Discounts</i>	1997/1998	1998/1999	1999/2000	2000/2001	Average
Local Calls	-8.28%	2.80%	-0.82%	-1.33%	-1.94%
National Calls	-11.44%	1.13%	-9.87%	-7.31%	-6.81%
IDD Calls	-4.84%	-4.25%	0.87%	-6.37%	-3.49%
Ave. of above	-8.53%	0.95%	-3.09%	-3.74%	-3.47%

Source: BT

3.54 When ICAs are also treated as reductions in the call price, the rate of decrease appears faster still, as shown in Table 3.5. The rate of increase in the line rental excluding the ICA is also shown for ease of reference.

Table 3.5

<i>Including Discounts & ICA</i>	1997/8	1998/9	1999/2000	2000/1	Average
Local Calls	-8.28%	2.80%	-3.88%	-9.60%	-4.56%
National Calls	-11.44%	1.13%	-12.13%	-13.87%	-8.77%
IDD Calls	-4.84%	-4.25%	-1.69%	-13.66%	-5.67%
Ave. of above	-8.53%	0.95%	-5.83%	-11.41%	-5.83%
Access (excl ICA)	0%	-0.13%	3.68%	7.27%	2.66%

Source:BT

3.55 Over the whole period since 1997/1998, rates of call price reduction appear to have been slower than expected by Oftel, even taking into account improvements to discounts and the introduction of ICAs. The relatively low rate of call price reductions is consistent with the persistence of high profits on calls noted earlier. However, there appears to have been some acceleration in the rate of price decrease (mainly given in the form of discounts and ICAs), which in 2000/2001 appears to have approached the level expected by Oftel. Together these figures suggest that competition has not developed as rapidly as expected when the current cap was set but that competitive pressure may now be increasing.

3.56 Another indication of the development of competition is how far the price reductions made by BT have exceeded the requirements of the cap. If competition rather than the cap were the binding constraint on prices, one might expect to see that the price reductions actually received by customers were greater than required by the cap. Table 3.6 shows the price reductions actually received by different customer groups expressed in the form of an 'average effective value of 'X'' for each year of the current control including the effects of discounts. This is shown both for customers within the main focus of the current controls (the lowest-spending 80%) and for those outside it. An effective 'X' of 5.0 for example, means that average prices for the customer group and year in question increased by 5% less than the rate of inflation, indicating that this group has enjoyed lower prices than required by the control (which would have permitted prices to rise by 4.5% less than inflation).

Table 3.6

Customer Group by level of spend	Effective Value of 'X' including discounts				
	1997/1998	1998/1999	1999/2000	2000/2001	Average
Deciles 1 - 8	5.3	5.0	5.6	6.7	5.7
Deciles 9 - 10	8.5	8.4	4.1	7.9	7.2

Source:BT

3.57 It can be seen that customers in deciles 1-8, on whom the cap is focused, have done slightly better than the control requires. This also means that they have done better than under previous controls, when price reductions favoured higher spenders and business users and to this extent the structure of the current cap has achieved its objectives. However, it appears that higher spending customers have not enjoyed reductions as great as expected when Oftel set the retail price cap even when improvements to discounts are included. Oftel anticipated that their bills would fall in line with about RPI-11.5 (see paragraph 3.7 of *Price Control Review: A consultative document issued by the Director General of Telecommunications on possible approaches for future retail price and network charge*

controls, March 2000). This is consistent with the analysis of price trends which suggested that competition had not driven call prices down as fast as expected when the cap was set. However, as also noted earlier, there are signs that the rate of price reduction is now increasing.

Price of operator assisted calls

3.58 It was noted earlier that the prices of operator assisted calls have recently increased after a long period of stability. The number of such calls is now very small however; so small that the service in effect has a zero weight in the price control basket. This calls into question the effectiveness of inclusion in the main basket as a means of controlling the prices of operator assisted calls, as it would be possible to make large proportionate increases in the prices for these calls without materially affecting compliance with the control or requiring offsetting reductions elsewhere. Whilst only a few international destinations can now not be reached by direct dialling and these may well be relevant for only a few customers, their significance may be greater for those customers who call these destinations regularly. Therefore, if it is desirable to control the price of these calls, it may be that inclusion in the main price control basket is no longer the most appropriate way of doing so.

Price of calls to mobiles

3.59 BT is subject to a separate control on its retail retention on calls to BTCellnet and Vodafone (that is, the control applies to the price net of the outpayment made to the mobile operator). The maximum increase in the retention is limited to RPI-7% per annum. In practice, the reductions which BT has made have been somewhat greater than those strictly required by the cap. However, this again seems likely to reflect the difficulty of accurately predicting the impact of a given price change and with carryover price reductions greater than required can be recouped in subsequent years. In addition, BT might have not have complied with the non-discrimination requirements of the control and this is being looked into by Oftel.

Market shares

3.60 Analysis of market shares can also give some idea of how competition is developing. A market share of 50% or more is usually considered as prima facie evidence that a firm is dominant, for example, although of course other factors must be taken into account before concluding that this is the case. In addition, trends in market shares over time may be a better indicator than a static snapshot. A market is more likely to be competitive if market shares are changing over time, particularly if there is a trend to reduced concentration. On the other hand, market shares which are essentially static may suggest that competition is relatively muted, particularly if prices are also stable.

3.61 The main competition to BT in the provision of access lines, particularly for residential customers, comes from the cable operators whose networks now reach more than half of UK homes. Businesses are also likely to be able to choose from operators of regional networks such as Colt or Torch. Table 3.7 shows the shares of line numbers of each type of operator. Kingston Communications Ltd, the incumbent access provider in the Hull area, is shown separately.

Table 3.7

		Operator share (no. of lines)	Operator share (no. of lines)
Market segment		September 1999	September 2000
Residential Customers	BT	83.0%	80.3%
	Cable	16.3%	19.0%
	Kingston	0.7%	0.7%
Business Customers	BT	89.2%	85.1%
	Cable	8.1%	12.1%
	Kingston	0.5%	0.5%
	Others	2.1%	2.3%

Source: Oftel Market Information

3.62 BT continues to have high market shares in both the business and residential sectors, as Table 3.7 shows. However, there has been a significant decline in its share of both residential and business lines over the past year, particularly in favour of cable companies (which include C&W for these purposes). Given the limited geographic coverage of cable networks, this suggests that cable penetration in the areas served by these operators is increasing to levels approaching 40%. In principle, competition in some areas could be sufficient to constrain prices nationally given that BT charges uniform prices countrywide. But in previous consultations, some respondents have expressed doubt that local competition between two operators (BT and the local cable operator) could provide adequate protection for customers.

3.63 In addition to competition from alternative access providers, BT faces competition in calls markets from IA operators. About 150 such operators offer service to customers throughout the country. The impact of such operators has been difficult to assess in the past because of gaps in Oftel's data. However, Oftel has taken steps to correct this and can now give a more accurate picture of how competition from IA operators is developing, at least in terms of volumes, although it is still possible that some operators' revenues are not fully recorded. This tends to confirm BT's view that there has been a recent acceleration in the rate of growth of IA traffic and that volumes of IA traffic in earlier periods were higher than Oftel's figures suggested. As a result, BT's market share now appears lower than previously thought. Table 3.8 shows latest estimates of BT's shares of main call markets by volume and revenue (for these purposes, Concert is included with BT).

Table 3.8

	% Market Share July - Sept 1999		% Market Share July - Sept 2000	
	Volumes	Revenues	Volumes	Revenues
Residential Customers				
Local Calls	77.9%	80.0%	72.1%	74.6%
National Calls	78.4%	80.7%	76.5%	75.9%
International Calls	59.1%	69.9%	52.4%	66.5%
Calls to Mobiles	72.4%	74.6%	69.7 %	71.7%
Business Customers				
Local Calls	64.7%	71.2%	61.1%	67.6%
National Calls	54.6%	73.0%	46.4%	59.9%
International Calls	23.9%	50.3%	22.3%	42.0%
Calls to Mobiles	55.2%	63.5%	54.9%	55.6%

Source: Oftel Market Information. Market shares have been adjusted to allow for the fact that some operators do not provide separate data for business and residential customers. In addition, Worldcom's submitted national minutes and revenues have been apportioned between local calls, national calls and calls to mobile.

3.64 A number of points emerge from Table 3.8. First BT could be said to retain a dominant share in all residential calls markets (with the caveat that, as data for international calls are aggregated, any variation in shares by route is not apparent) and at least in business local calls and calls to mobiles markets. Moreover, BT's shares of revenues are generally higher than its shares of minutes and this is consistent with its prices being higher than other operators, although it may also reflect differences of call mix (and note the caveat above about the under-recording of some operators' revenues).

3.65 On the other hand there is evidence that competition is increasing. BT's share of all calls markets is now declining quite rapidly and there is some suggestion that the decline in BT's share of long distance voice calls is accelerating. It is also apparent that IA operators are taking a significant share of local calls and are not restricted to the supply of national and international calls. Oftel estimates that 19% of residential IA traffic is composed of local calls, as against 25% national calls, 13% international calls and 4% calls to mobiles. Comparable proportions for BT would be: local calls - 37%, national calls - 15%, international calls - 1.4%, calls to mobiles - 4.5%. This is consistent with the results of Oftel market research which shows that an increasing number of customers are choosing IA operators for all types of calls. Almost one half of the IA users included in the February 2001 survey of residential customers used the IA operator for all of their calls. The remainder said that they tended to use BT for their local calls.

3.66 Oftel believes that competition to BT is increasing but is not yet fully effective. Competition is likely to be stronger in the provision of some services and for some customer groups than others.

Whether anti-competitive behaviour is absent

3.67 The competitiveness of markets is not simply a function of structural indicators such as market shares. It is primarily influenced by firms' behaviour. One of Oftel's functions is the prevention of practices by telecommunications companies which could damage or distort

competition. Such practices should not occur in effectively competitive markets since only firms with market power are capable of behaving anti-competitively and, in an effectively competitive market, no firm can have market power. However, a market which otherwise appeared to be competitive might be distorted by leverage from other markets where market power still exists. The extent to which Oftel has been required to intervene can therefore provide some evidence of the extent to which leverage is occurring.

3.68 Table 3.9 is derived from Oftel's management plan and shows the action that Oftel has taken in 1999 and 2000 to ensure compliance with licence conditions (which, amongst other things, concern competitive behaviour).

Table 3.9

Outcomes	Formal Action	Informal Action	Co-regulatory	Self-regulatory	No case to answer
1999 (<i>all telcos</i>)	8	1	14	5	33
2000 (<i>all telcos</i>)	2	3	26	7	38
<i>of which BT</i>	2	2	13	7	29

Source: analysis of Oftel's Competition bulletins - concluded cases

3.69 In a large proportion of cases where some action (including co- and self-regulation) was taken, the complaint related to leverage in some way of BT's market power at the wholesale level into related markets, either by refusal to supply a wholesale service, by unfair charging for a wholesale service or by undue preference of one of BT's own businesses. There was also one case of misuse of customer information.

3.70 The competition case statistics suggest that there is a continuing need to control BT's ability to abuse its market power at the wholesale level. However, this would not necessarily imply that retail prices also need to be directly controlled, since competition at the retail level could in principle provide protection for consumers, given adequate controls on wholesale market power. The data could therefore also be consistent with greater reliance on ex-post remedies, including actions under the Competition Act, as well as measures to increase competition at the retail level, for example the proposal floated in earlier Oftel consultation documents for resellers to have rights to use BT's network on cost-based terms.

Impact of Recent Entry

3.71 As noted above, IA operators have been increasing their share of the residential market for all call types. Some of the more recent entrants to the market, in particular, have been expanding rapidly. One reason may be that IA now appeals to a broader range of customers than previously. Oftel has attempted to identify the segments of the residential market which could potentially be addressed by IA operators by calculating the maximum discount which an IA operator could offer relative to BT's prices, given its likely costs, and taking account of the fact that customers need a minimum saving on their bills if they are to be induced to switch.

3.72 Historically, IA operators could not profitably offer local calls and this limited their appeal to most customers. However, since about 1996/1997, the margin between the wholesale charge for call origination and BT's retail local call price has been sufficient to allow IA operators to compete despite the extra switching involved. Prior to 1996/1997 IA operators could probably have addressed the top four deciles of customers profitably. Since

then, the margin on individual call types is likely to have increased. However, BT has improved its discount schemes and, in particular, ICA in return for increases in the quarterly line rental. These are likely to have made IA appear less attractive for some customers and Oftel's analysis suggests it is still likely to be most relevant to the top four or five deciles of residential customers by spend.

3.73 An analysis of BT's discount schemes also suggests that most competition is faced for higher spending customers. BT's 'BT Together' scheme could be worthwhile even for customers in the fourth decile but the savings are likely to be modest for spend levels below about the median. The potential savings for the highest spending customers are however more substantial.

3.74 In *Proposals for Network Charge and Retail Price Controls from 2001*, February 2001, Oftel set out the reasons underlying its decision to extend the current retail price control until the end of July 2002, a decision which was supported by most respondents to Oftel's earlier consultation on this proposal. The main reason was the expectation of significant changes in the market over the coming year which were expected to increase competitive pressures further. Two of the main relevant developments were the introduction of full carrier pre-selection, which would enable customers to use an IA-type service without having to dial a four or five digit access code, and the rolling out of higher bandwidth technology, in particular by the unbundling of BT's local loop (LLU).

3.75 Full carrier pre-selection may finally remove one of the main deterrents to using IA operators as an alternative to BT: the need to dial additional digits to do so. Carrier pre-selection is being implemented in the UK in two stages; first by an interim solution involving the use of auto-diallers (ICPS), which will cease to be available at the end of 2001, and then by 'permanent' carrier pre-selection (PCPS). It is the latter which is expected to have the greatest impact on competition.

3.76 Take-up of PCPS was initially relatively slow as a result of teething problems with call routing and inter-operator billing. The technical problems have now been resolved and forecasts are for strong growth in customer numbers over the next six months. Oftel hopes therefore that the impact of PCPS will begin to become apparent during the consultation period.

3.77 As noted in earlier consultative documents, the impact of service providers using Calls and Access has so far been limited. One factor is likely to have been the slim margins available, since the charges for using Calls and Access are based on BT's retail prices less a discount to allow for the costs saved by BT in not serving retail customers. The possibility of allowing service providers to use BT's network at charges based on BT's costs would address this. It is also possible that other aspects of BT's service delivery have hampered take-up and another option would be to concentrate on making the non-price aspects of Calls and Access more attractive. One advantage of the product is that it avoids the two-bills problem of IA. It may be of particular interest to companies with well-known brands from outside the telecommunications industry and Oftel is undertaking research to assess consumer willingness to switch to resellers with established brands from other markets.

3.78 The development of broadband services is relevant, not because broadband services are themselves considered as candidates for price control, but because new operators may enter the market to provide such services. They may also want to provide a package including

basic services as well, and thus competition to provide the latter could be increased. There are four main ways of providing competing broadband services to BT; by means of its wholesale ADSL service, by LLU, by cable modems, and by broadband wireless access (BWA). However, the market for broadband services is still at a very early stage in the UK. At present, some providers are focusing on the business market rather than residential customers, amongst whom narrowband unmetered dial-up access is proving increasingly popular.

3.79 Over 170 operators and service providers have taken BT's wholesale ADSL service, and so far over 70,000 customers have had ADSL installed, including those using BTOpenworld. This is, however, double the number of ADSL end-users connected at the end of February, so customer numbers are growing rapidly. At present, the number of exchanges able to deliver wholesale ADSL cover 50% of UK households and this figure is expected to rise to 60% by the end of September. Some analysts have however suggested that take up of broadband access by residential customers will be gradual, with only some 14% of European households predicted to be using broadband by 2005. Take-up by businesses is likely to be more rapid, with survey evidence suggesting that about 3% of businesses may have been accessing the Internet via DSL in February 2001, up from less than 0.5% in November 2000.

3.80 LLU enables competing operators to install their own equipment in BT's exchanges so that they can offer their own broadband services to customers rather than reselling BT's ADSL service. Since May 2001, operators have been able to place orders for co-location at any of BT's exchange sites at any time, as with other wholesale interconnection products. In addition, operators have been able to order distant co-location on this 'business as usual' basis since December 2000. The first commercial LLU operations began in April with more orders expected in the near future.

3.81 Both NTL and Telewest offer high-speed Internet access via cable modems, though not yet in all their franchise areas. Publicly available figures suggest that together, the two had about 51,800 cable modem customers at the time of writing. NTL recently published a target of 100,000 cable modem customers by the end of 2001. Tele2 currently offers BWA data-only services in the Thames Valley, Leicester, Nottingham, Leeds and Bradford. Atlantic Telecom also uses wireless access, mainly to customers in Scotland. Whilst it is licensed to serve 50% of UK customers, Atlantic is among those operators which has recently scaled back its investment plans.

3.82 Further spectrum to provide BWA was auctioned by the government in December 2000. Although the outcome was seen by some as disappointing, in that a number of available licences were unsold and receipts were lower than expected, six operators won licences in seven regions covering 60% of the UK population. It is not clear when services are likely to be launched. Additional tranches of spectrum have also been allocated to BWA, for future assignment if demand arises.

3.83 In principle, another potential source of competition to BT is the mobile networks. However, for the reasons set out in the Chapter 2, Oftel's view is that fixed and mobile services are in separate markets. This means that mobile access and call prices do not significantly constrain the prices which BT is able to charge for its fixed services. Oftel believes that this is likely to remain the case for the foreseeable future.

3.84 This view is supported by evidence from recent surveys carried out for Oftel. Respondents appear to consider the fixed telephone ‘a necessity’ in any home and most believe that it would be very difficult to replace it with a mobile phone. The fixed telephone appears to represent the ‘default option’ and will generally be used for calls from home and particularly for longer ‘chats’.

3.85 Although there is clearly some substitution on a call-by-call basis, mobile usage is generally perceived as more expensive than using a fixed line. The recent introduction of fixed line packages in which some calls are in fact free at the margin has contributed to this perception. Even so, more than three quarters of respondents who had started using BT’s Talk Together package (which includes all local evening and weekend calls in return for a fixed monthly subscription) had not changed their mobile usage as a result. Less than 3% said that they were using their mobile a lot less and this suggests that the extent of mobile substitution to take advantage of lower prices may have been relatively limited. The mobile provides additional convenience – creating ‘calling options which could not be considered from home’ – and its usage appears largely complementary to that of the fixed phone.

3.86 How far do you expect the prices of BT’s basic fixed services to be constrained by existing and new sources of competition, in particular from CPS, broadband and mobile operators, over the next 2-3 years?

Structural indicators

Entry Barriers

3.87 The threat of potential entry may prevent incumbent firms from raising prices above competitive levels. However, if there are significant barriers to entry, this threat may be weak or absent. Incumbent operators may then be able to raise prices and make persistent excess profits without attracting additional competition which would reduce them again.

3.88 One of the most important types of entry barrier is sunk costs. Sunk costs are those which must be incurred to enter an industry but which cannot be recovered on exit. A potential entrant will only incur the sunk costs of investment in an industry if it expects to cover these sunk costs as well as the avoidable costs of production from revenues earned. The incumbent on the other hand, has already made its sunk investments and so will stay in the market as long as it can cover its avoidable costs. The incumbent may then be able to exploit this asymmetry by signalling to the entrant that, if it were to enter the market, prices would be too low to cover sunk costs. Entry would then be deterred.

3.89 Sunk costs are particularly relevant to telecommunications because a very large investment is needed to create an efficient telecommunications network and it is likely that little of this could be recovered if the entrant later decided to leave the market. This is likely to be exacerbated by the significant economies of scale and density which characterise telecommunications networks. These mean that a large network is always likely to have lower costs than a smaller one, with the result that an entrant would need to take a large share of the market if it was to be able to compete. But in order to gain such a large market share, it is likely to have to price well below the incumbent, which would make it more difficult to recover sunk costs. Therefore barriers to entry by competing network operators are likely to be high.

3.90 Entry may be easier where entrants can benefit from an economy of scope – the cable companies being an example of this – or where the entrant can make use of the incumbent’s network. The barriers to entry into retail voice calls by IA operators and resellers are significantly lower than for operators rolling out networks, because such suppliers do not need to incur the large sunk costs of building direct access networks. Whilst IA operators depend on the regulatory framework which enables them to obtain wholesale call origination and termination from BT at cost oriented charges, they have been given certainty to plan their future business to 2005 via the new Network Charge Control.

3.91 However, as described earlier in this chapter, there is some evidence that barriers to switching exist, which prevent customers changing suppliers to take advantage of competing offers from cable and IA operators. A potentially enduring barrier to switching is provided by the perceived quality of service and reputation of alternative suppliers. Experimentation with alternatives is sometimes perceived as risky and this can give rise to switching costs where customers are not well informed about the service quality of rival operators. Survey evidence suggests that lack of awareness and information remain barriers for some customers.

Absence of Inefficient Suppliers

3.92 In an effectively competitive market, the pressure of rivalry between operators will force them to minimise costs. An operator whose costs were higher than its rivals’ would find its prices undercut, as more efficient operators sought to gain customers by cutting prices to the level of their own costs. The inefficient operator would not be able to make an adequate return and would be forced to improve its own efficiency or exit the market.

3.93 By contrast, if a market is not competitive, prices may be above the efficient level of costs to an extent which allows inefficient operators to remain in the market. These operators take the benefits of muted competition in the form of high costs rather than high profits. This phenomenon is well-recognised by economists who often refer to it as ‘X-inefficiency’. Significant, persistent inefficiency is inconsistent with an effectively competitive market.

3.94 As described in Chapter 4 of *Proposals for Network Charge and Retail Price Controls from 2001*, February 2001, Oftel commissioned, as part of the review, a study of BT’s efficiency relative to that of the US local exchange carriers (LECs). The study concluded that BT was between 1.2% and 4% less efficient than best practice, the range reflecting differences in the methodologies used.

3.95 One reason why the US LECs make good comparators is the availability of detailed cost data for these companies. It might however be objected that, as regulated dominant operators, they may face little competitive pressure to reduce costs and therefore may not themselves be operating efficiently. However, many are now subject to price control (RPI-X) rather than rate of return regulation, which provides better incentives to reduce costs. It should also be borne in mind that the comparison is with the best-performing LECs in the sample, who are likely to be a suitable benchmark.

3.96 The evidence of this study, therefore, does not suggest that BT is harbouring very high levels of X-inefficiency. However, Oftel would be interested to consider comparisons with other overseas operators if data were available and other possible indicators of BT’s efficiency.

Changes in Market Structure over Time

3.97 The discussion in paragraphs 3.60-3.66 focuses on BT's share of access and calls markets. It shows how BT's market shares remain generally high, although they have tended to decline over time. Market structure is not simply a matter of the largest firm's market share however. The competitiveness of a market, to the extent that this is affected by market structure, will also reflect the number of other firms competing in it and their relative strengths.

3.98 A commonly used measure of market concentration which reflects the shares of all firms in a market is the Hirschman-Herfindahl index (HHI). This is given by the sum of the squares of all the firms' market shares. Under certain, though unrealistic, assumptions it is even possible to relate the competitiveness of a market directly to the HHI, though empirical evidence is less clear-cut. However, the guidelines on mergers used by the US (and now EU) competition authorities contain explicit thresholds defined in terms of the HHI. A market with an HHI of below 1000 is regarded as 'unconcentrated', a market with an HHI of between 1000 and 1800 is regarded as 'moderately concentrated' whilst a market with an HHI of above 1800 is regarded as 'highly concentrated' (in which case a merger will be subject to further scrutiny). A monopoly would have an HHI of 10000, which is therefore the maximum possible value of the index.

3.99 It can be seen, simply by squaring the BT market share figures from Tables 3.7 and 3.8 (which gives a minimum value for the HHI, on the assumption that the shares of all other firms in the market are negligible) that the markets for all price controlled services would be considered as highly concentrated with the possible exception of international calls for business customers. This is confirmed by Table 3.10, which shows values of the HHI for each of the main PSTN markets, calculated from Market Information data (with the adjustments described earlier). Cable operators, with the exception of C&W, have been treated as a single operator, whilst 'other operators' (apart from Worldcom), for which individual data are not published, have been excluded from the calculation (effectively treating the share of individual operators within this category as negligible).

Table 3.10

	HHI July-Sept 1999		HHI July-Sept 2000	
	Volumes	Revenues	Volumes	Revenues
Residential Customers				
Access	7055	7715	6809	8039
Local Calls	6291	6604	5767	6124
National Calls	6273	6647	6083	6022
International Calls	3587	4968	2962	4658
Calls to Mobiles	5468	5763	5425	5740
Business Customers				
Access	7992	7814	7321	7274
Local Calls	4438	5271	3995	4793
National Calls	3287	5681	2555	3825
International Calls	1370	3493	1565	2382
Calls to Mobiles	3285	4410	3415	3441

Source: Oftel Market Information

3.10 Residential HHIs are affected by the NTL takeover of C&W's Consumer Division during July-September 2000, which will tend to raise HHIs for this period relative to those for July-September 1999. The HHIs on a consistent basis generally show a clear downward trend over the period. In the case of business international call volumes, the rise in the HHI appears to reflect an increase in Worldcom's market share at the expense of smaller operators.

Summary

3.11 This Chapter has set out the framework which Oftel proposes to adopt for the review of competition in retail telecommunications markets and the indicators which it intends to consider. It has also set out the data which it currently has available. Oftel would welcome comments on the following questions:

3.12 Is the framework which Oftel has set out for its competition analysis appropriate? Is Oftel considering the most appropriate set of indicators for this purpose? How should these indicators be interpreted and combined in Oftel's overall assessment of market conditions? Which markets do you expect to become effectively competitive in future and over what timescales? What implications does this have for future controls on BT's retail prices?

Chapter 4

Consultation Details

Oftel would welcome comments on its proposed market definition and on its preliminary analysis of competition against its key indicators. Oftel would also welcome any other data that potential respondents believe would help Oftel assess competition in the provision of basic telephony services.

Oftel seeks the views of consumers and industry by **2 October 2001**. There will then be a 2-week period to **16 October 2001** during which comments on the representations made during the first phase of consultation are invited.

Comments on the proposals should be made in writing and sent to:

Mike Galvin

Regulatory Policy
50 Ludgate Hill
London
EC4M 7JJ
Tel: 020 7634 8869
Fax: 020 7634 8924
E-mail mike.galvin@oftel.gov.uk

Confidential responses should not be sent via the Internet. Written comments will be made publicly available in Oftel's Research and Intelligence Unit except where respondents indicate that the response, or parts of it, is confidential. Respondents are therefore asked to separate out any confidential material into a clearly marked annex. In the interests of transparency, respondents are requested to avoid confidential markings wherever possible. Appointments to view written comments in Oftel's Research and Intelligence Unit must be made in advance (tel: 020 7634 8761, fax: 020 7634 8946).

Internet

This document is available on Oftel's website at www.oftel.gov.uk. Oftel would like to set up a link between this document and any responses placed on respondents' own Internet pages. Please contact Jo Hamilton at Oftel on 020 7634 8755 or by e-mail at web.oftel@gnnet.gov.uk to arrange this.

Oftel has a free e-mail based mailing list to help people stay informed about the work that Oftel is doing. Each time an Oftel document is published and placed on Oftel's website at www.oftel.gov.uk, subscribers to the list receive an e-mail informing them about the document. To register, please go to the *What's New* section of the website and link to the electronic form.

Alternative formats

Copies of this consultation document are available on disk. Accessible formats such as large print, Braille and audio cassette can be made available on request.

Please contact the Oftel Research and Intelligence Unit on 020 7634 8761 or by e-mail at infocent@oftel.gov.uk for more information.

The consultation criteria

Oftel considers that this document meets the Cabinet Office code of practice on written consultation documents. The code is reproduced below for convenience. If you have any comments or complaints about this consultation process please contact:

Oftel Co-ordinator for the code of practice:

Rob Jex,
Oftel,
50 Ludgate Hill,
London EC4M 7JJ,

e-mail: rob.jex@oftel.gov.uk

tel: 020 7634 5350

fax: 020 7634 8943

- 1) Timing of consultation should be built into the planning process for a policy (including legislation) or service from the start, so that it has the best prospect of improving the proposals concerned, and so that sufficient time is left for it at each stage.
- 2) It should be clear who is being consulted, about what questions, in what timescale and for what purpose.
- 3) A consultation document should be as simple and concise as possible. It should include a summary, in two main pages at most, of the main questions it seeks views on. It should make it as easy as possible for readers to respond, make contact or complain.
- 4) Documents should be made widely available, with the fullest use of electronic means (though not to the exclusion of others), and effectively drawn to the attention of all interested groups and individuals.
- 5) Sufficient time should be allowed for considered responses from all groups with an interest. Twelve weeks should be the standard minimum period for consultation.
- 6) Responses should be carefully and open-mindedly analysed, and the results made widely available, with an account of the views expressed, and reasons for decisions finally taken.
- 7) Departments should monitor and evaluate consultations, designating a consultation co-ordinator who will ensure that all the lessons are disseminated.

Glossary

Bandwidth

The physical characteristic of a telecommunications system that indicates the speed at which information can be transferred. In analogue systems, it is measured in cycles per second (Hertz) and in digital systems in binary bits per second (bit/s).

BT's Retail Systems Business (or BT Retail)

The business containing all the costs, assets and liabilities which are comprised in the Systems Business which are not comprised in the Access Business or the Network Business. A full description is provided in the Accounting Documents.

Call origination

An interconnection service consisting of conveyance from the local exchange/concentrator to the point where the call exits the local switch (digital local exchange). This interconnection service enables operators to offer call services to the originating operator's customer.

Call termination

An interconnection service consisting of conveyance of a telecommunications service from the local exchange closest to the called customer's premises to the concentrator serving the called customer.

Calls and Access

A wholesale product available from BT which allows service providers to rent a BT telephone line and then supply the line and calls over it to the service provider's own customers. The service provider sets the tariffs charged to the customer and is responsible for all customer service. BT continues to own and maintain the line.

Carrier pre-selection (CPS)

A facility enabling customers to choose their carrier for certain defined classes of call, by selecting the operator of choice in advance (and having a contract with the customer), without having to dial a routing prefix or follow any other different procedure to invoke such routing. CPS will be introduced on BT's network with effect from 1 April 2000.

Common costs

Costs that are incurred in the supply of all or a group of products or services provided by the company and that do not arise directly from the production of a single good or service.

Cost of capital

A firm's cost of capital can be defined as the rate of return that could be earned in the capital market on securities of equivalent risk. In general, the higher the riskiness of the firm's activities, the higher its cost of capital, since investors typically require compensation for greater risk. For a firm financed by debt and equity, the cost of capital will be a weighted average of its cost of capital from both sources.

Direct access

The situation where a customer is directly connected to a telecommunications operator other than BT by a wire, fibre-optic or radio link.

Geographically averaged prices

Prices established by averaging the costs of network elements across the country so that customers in different areas of the country do not pay different rates.

Geographic number portability

Number portability between operators enables a customer to transfer from one operator to a second operator and retain the same number provided the customer remains at the same address.

Indirect access (IA)

Where a customer's call is routed and billed through operator A's network even though the call originated from the network of operator B.

Interconnection

Interconnection means the physical and logical connection of two operators' networks thereby allowing customers of one system to connect with customers of the other, or to access services provided from the other system.

Internet protocol (IP)

Refers to the special network arrangements required for transmitting data over the Internet.

Local loop unbundling (LLU)

A process by which BT's exchange lines are physically disconnected from BT's network and connected to other operators' networks. This enables operators other than BT to use the BT local loop to provide services to customers.

Narrowband

A service or connection allowing only a limited amount of information to be conveyed, such as for basic voice telephony. This compares with broadband which allows a considerable amount of information to be conveyed. See also bandwidth.

Network Charge Controls

Interconnection charging regime introduced on 1 October 1997. BT is free to set charges for competitive and new interconnection services. Charges for interconnection services that are not yet competitive are subject to charge controls.

Prior Year Revenue Weighting

The basket weight for BT's price and charge controls have been set equal to the proportions of basket revenue accruing to the relevant services in the year before that in which the price changes take place.

Public Telecommunications Operator (PTO)

Network operators providing services to the public with powers granted by the Secretary of State for Trade and Industry, under the Telecommunications Act 1984, to enable them to install their systems on public and private land, property etc.

RPI-X%

The system of price control where average annual price changes for the price-controlled services are limited to the increase in inflation (as measured by the Retail Price Index) less a specified number (X).

Service provider

Provider of telecommunication services, or services with a telecommunication service component, to third parties whether over its own network or otherwise.

Universal Service Obligation (USO)

A provision in some Telecommunications Act licences requiring the licensee to provide certain services to all specified persons. For example, BT is currently required to provide basic voice telephony and certain other established telecommunications services to anyone who may reasonably request them.