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The reference

2.1. On 5 March 1998 the DGT made three references to us in exercise of his powers under section 13 of the Telecommunications Act 1984 (the 1984 Act). The references related to BT, Cellnet and Vodafone and followed an investigation by the then DGT over the previous 18 months. This had led the DGT to believe that these companies would ultimately reject any modification of their licences that he might propose whereby their charges in respect of calls from fixed lines to mobile phones (fixed-to-mobile calls) would be reduced to levels he considered appropriate. Under the 1984 Act the DGT is able to modify provisions in the licence of a public telecommunications operator (PTO) by agreement with the operator or, in the absence of agreement, following a reference to the MMC that results in an adverse public interest finding and conclusions that the adverse effects can be remedied by modifications to the licence.

2.2. This report concerns the reference relating to BT which is set out in full in Appendix 1.1. The references relating to Cellnet and Vodafone are reported on separately. The first question specified in the reference concerning BT, in summary, is whether the charges made by BT to users of its fixed public telecommunication system for calls to subscribers to the mobile public telecommunications networks operated by Cellnet and Vodafone operate or may be expected to operate against the public interest. Before addressing this question we summarize in the following sections the relevant background. We look first at how the industry in which BT operates has developed since the company was privatized in 1984. We then review the regulatory background and the events leading up to the reference.

Industry background

2.3. BT was privatized in 1984, when just over 50 per cent of its shares were offered for sale and the shares were admitted to the Official List of the London Stock Exchange; the remainder of the Government's shareholding was sold in the early 1990s. A new framework of regulation had been established under the 1984 Act which abolished BT's statutory monopoly and provided for the licensing of the running of telecommunication systems.

2.4. The chief regulatory functions are shared between the Secretary of State and the DGT. The former has taken prime responsibility for market opening measures, in particular by licensing new operators. The powers exercised by the DGT include enforcing operators' compliance with licence conditions and proposing licence modifications. Both he and the Secretary of State are under a duty to exercise their functions in the manner best calculated to secure the provision of telecommunication services throughout the UK and the ability of operators to finance the provision of those services. They also have duties in respect of other matters, including notably the promotion of the interests of users, effective competition, efficiency and economy.

2.5. In 1983, under what became known as the duopoly policy, the Government decided that for a period of seven years (1984 to 1991) it would license only one new operator, Mercury Communications Ltd (Mercury—now part of Cable & Wireless Communications plc (CWC)), to provide a fixed network. In the same year licences were issued to Cellnet and Vodafone to build and operate mobile networks.

2.6. Mercury initially focused principally on the more profitable areas of business such as long-distance and international calls and services to large corporate customers. It did not compete directly with BT in providing services to smaller customers, but offered services by means of indirect access through BT's local network (often referred to as the local loop). During the duopoly period companies were licensed under separate legislation to provide broadband cable television services in specific geographic areas. Some of these companies were a potential source of competition to BT as they were capable of providing telephony services on their networks, but they were only permitted to do so as agent for either BT or Mercury; relatively few such opportunities were taken up. In turn BT and Mercury were prevented from using their networks to convey broadcast entertainment services to the home.

2.7. In 1991, following a review, the Government decided to end the duopoly policy (except in relation to international services) and said that it would consider applications from any company wishing to establish a fixed network in competition with BT and Mercury. Cable companies were permitted to provide voice telephony services in their own right, but the Government decided to retain the prohibition on BT and Mercury conveying broadcast entertainment services to the home until 2001, subject to a review in 1998. The review was completed earlier this year with the publication of *Broadband Britain* which proposed that the restriction on BT and other PTOs, preventing them from offering broadcast entertainment services over their networks, would be progressively lifted. Since the 1984 Act came into effect, over 400 PTO licences have been granted by the Secretary of State including fixed-link PTO licences, mobile licences and licences to provide international services over lines leased from BT or CWC (which includes the business of Mercury—see paragraph 2.5).

2.8. Developments in licensing further mobile networks had been affected by the limited radio spectrum available for such services. The original licences granted to Cellnet and Vodafone in 1983 had been for analogue systems, but by the end of the 1980s a more effective technology in the form of digital mobile telephony was available. In 1991, three further PTO licences were granted to provide mobile telephony using digital technology at 1800 MHz, but a subsequent merger reduced the number of operators to two—Orange Personal Communications Ltd (Orange) and One2One (the trading name of Mercury Personal Communications Ltd). One2One began operating in September 1993 and Orange in April 1994. Additional spectrum was made available to Cellnet and Vodafone for digital services at 900 MHz and those companies now operate both analogue and digital networks.

The framework of regulation

2.9. Regulation of BT has several facets. The following paragraphs consider two of these, namely BT's relations with its customers and with other licensed operators (OLOs).

2.10. BT's licence contains a range of conditions designed to protect the interests of consumers. First, there is an overall price cap covering a range of retail services including exchange line rentals and connections; local, national and international calls; and operator-assisted calls. Prices for the basket of services taken as a whole, and focused on the spending pattern of the lowest 80 per cent by spend of retail customers, are currently not allowed to rise by more than the retail price index (RPI)–4.5 per cent a year. In his proposals in June 1996 for the present retail price control, which applies from August 1997 to 31 July 2001, the DGT said that he was confident that, at the retail level, effective competition was not far away and that the retail price arrangements he was proposing would be the last. Fixed-to-mobile calls are among the services excluded from the price control basket, together with integrated services digital network (ISDN) connection charges and public payphones.

2.11. BT is prohibited by its licence from exercising undue preference or undue discrimination in respect of customers. This constrains its ability to charge different customers different prices. In addition BT may not favour, to a material extent, its own businesses if that would place competitors at a disadvantage. BT has to adhere to the published terms and conditions on which it offers services; prices of fixed-to-mobile calls are included in this obligation. It is obliged to provide services to all persons in the UK who reasonably request them (unless the DGT is satisfied that they are adequately provided by another operator); this is referred to as the universal service obligation.

2.12. In 1996 BT agreed an additional condition in its licence, which became effective on 31 December 1996, designed to reflect the provisions of the EC Treaty which prohibit the abuse of a dominant position and the entering into of anti-competitive agreements. A similar condition is now in place in the licences of the main OLOs.

2.13. In practice the OLOs have only been able to offer voice telephony in the UK by interconnecting their networks directly or indirectly with that of BT, which is required by its licence to enter into agreements with OLOs for this purpose. Substantial growth in interconnection occurred from 1991 with the ending of the duopoly.

2.14. The requirements on interconnection in BT's licence originally provided that where BT and another operator were unable to agree any terms and conditions of interconnection, including the charges payable, the DGT could, on request by either operator, determine them. The relevant condition also provided that BT should be able to recover its costs, including the fully allocated costs (FAC) attributable to the services concerned, the relevant overheads and a reasonable rate of return on capital. A similar condition is contained in CWC's licence.

2.15. In March 1994 the DGT issued a consultative document seeking views on how the interconnection regime could best be adapted to meet the needs of the developing multi-operator environment. As a result, five new conditions were added to BT's licence aimed at easing the negotiation of interconnection agreements for use of BT's network. These provided, *inter alia*, for the drawing up by the DGT of a list of standard interconnection services and the prices to be paid for them. BT is also required, under what is referred to as accounting separation, to publish separate financial statements for its various businesses, including BT Access, BT Network and BT Retail Systems and activities within them. BT Retail Systems and OLOs purchase network services from BT, paying the same prices (see Appendix 3.4 for a summary of the regulatory accounting requirements affecting BT). BT Retail has eight constituent activities, of which four are, respectively, local calls, national calls, international calls and calls to mobile.

2.16. In October 1997 there was a further change to the arrangements for setting BT's interconnection charges. First, a new set of network use charges was established from 1 October 1997 using long-run incremental costs (LRIC) in place of the historical cost accounting (HCA) FAC costs on which network charges had previously been based. The incremental costs used by the DGT to set the new network charges include equal mark-ups (with the exception of one service) to recover common costs. The overall effect of the introduction of the new LRIC-based charges was a reduction from FAC charging levels by about 10 per cent on average. Second, instead of being set annually by the DGT on the basis of the accounting separation financial statements for BT Network, interconnection charges became subject to a new price cap as part of the network charge control (NCC) arrangements (see paragraph 3.52). The price cap provisions vary according to the degree of competitiveness of the service concerned. Prices for competitive services are not specifically constrained, while prices for prospectively competitive services are subject only to a safeguard cap of RPI–0 per cent a year. Prices for bottleneck and non-competitive services (in three separate baskets) are subject to a cap reducing by RPI–8 per cent a year.

Background to the reference

2.17. In June 1996, in the course of his review of BT's retail price controls, the DGT announced that he would investigate the prices of fixed-to-mobile calls. This was in response to concerns expressed by residential and business consumer organizations which felt that such prices were unduly high. At the time of the review, the DGT said that the issues raised, while affecting prices, were not ones that could be addressed through general retail price controls. As a result fixed-to-mobile calls were excluded from the scope of the 1997 to 2001 retail price control (see paragraph 2.10); at the same time the DGT continued his consideration of price levels for fixed-to-mobile calls.

2.18. In considering charges for fixed-to-mobile calls, a major concern of the DGT was that MNOs, like other network operators, had a monopoly position over the 'termination' of calls on their own networks (the final completion of calls on a network is referred to as termination). The DGT considered that operators had such a position because when someone wanted to make a call to a mobile phone or any other phone then the calling party had no choice but to call the network to which the called party had subscribed. According to the DGT this meant that the MNOs were able to set charges for call termination without significant competitive pressure. The DGT therefore examined both the level of the charges made by the MNOs to FNOs for the termination of calls on their network and the mark-up that BT itself added in setting its retail prices. (This mark-up, which covers conveyance on BT's network, its retail costs and its return, is generally referred to as BT's retention.)

2.19. In March 1997 the DGT published a consultative document, *Prices of Calls to Mobile Phones,* setting out his preliminary views and asking for comments. The DGT said that while the underlying issues about cost allocations and regulatory procedures were rather complex, the emerging conclusion was that prices for calls from BT to Cellnet and Vodafone looked to be too high, mainly because the MNOs charged too much for delivering calls to customers on their networks but also because the retail costs BT allocated to fixed-to-mobile calls seemed high and the DGT said that he would be examining them further. In the light of responses to his consultative document the DGT said that he expected to take early action to see that prices of fixed-to-mobile calls came down.

2.20. In his Statement accompanying the reference to us in March 1998 the DGT said that, having considered the matter further in the light of representations received and further work, he considered that the price of fixed-to-mobile calls was still too high. In the view of the DGT both the termination rates that Cellnet and Vodafone charged and the retail uplift that BT added on to its network costs were excessive. The three operators disagreed with the DGT's assessment of the appropriate level of charges and cost.

2.21. The DGT had proposed that Cellnet and Vodafone reduce their charges for terminating calls on their networks in order to reflect more closely the costs of termination. This would have involved a reduction from the then existing level of 16.2 ppm (averaged between the operators) to 10.6 ppm on an FAC basis. However, following recent modifications to the MNOs' licences, the methodology for calculating interconnection charges was no longer mandated as FAC. The DGT considered that LRIC was the appropriate basis to use and that this would result in a still lower termination charge. In order to pass the reduction through to consumers, the DGT said that he would expect BT and other originating operators to make a reduction of at least the same amount in their retail prices for fixed-to-mobile calls. Further, the DGT considered that BT should reduce its retention within the retail price of fixed-to-mobile calls to the same level as the average retention on local and national calls since the use of BT's network elements was the same as for these types of call. He estimated that this would require a reduction of 2.4 ppm, or 41 per cent, in BT's retention on fixed-to-mobile calls. BT disagreed that its average retention on these calls was excessive.

2.22. The combined effect of the reductions proposed by the DGT to Cellnet's and Vodafone's termination charges and to BT's retention would result in the price of a call to a mobile phone on the Cellnet or Vodafone network falling from a daytime rate of 37.5 ppm in March 1997 (when the DGT's consultative document was issued) to about 20 ppm, a fall of around 17 ppm.

2.23. Under a determination of fixed-to-mobile interconnection charges requested by Mercury in 1991, the DGT set charges for the termination of calls from Mercury subscribers to the Cellnet and Vodafone networks and this determination was subsequently updated annually. In 1997/98, the average weighted charge was set at 12.3 ppm, but Cellnet and Vodafone continued to charge BT and other operators 16.2 ppm. The DGT considered this to be discriminatory and sought to take corrective action. However, in January 1998 both Vodafone and Cellnet signed revised interconnection agreements with CWC under which Mercury's successor, CWC, would pay the same higher amounts as BT and other operators as part of a package of new arrangements affecting CWC's business.

2.24. The DGT subsequently notified Cellnet, Vodafone and BT early in 1998 that he considered charges for fixed-to-mobile calls to be excessive because both termination charges and BT's retention were too high, and that he proposed to refer these matters to the MMC. This led to the references to us under section 13 of the 1984 Act.

2.25. The DGT had also, prior to making the references, investigated the matter of charges made for unanswered and diverted calls to the networks of Cellnet and Vodafone. Calls to a Cellnet or Vodafone mobile phone which is switched off, out of coverage, or remains unanswered, and, in certain circumstances, calls that are diverted, activate a recorded announcement to advise the caller of the situation; and charges are made for the calls from the point of this announcement. The DGT considered this practice to be inappropriate since it was inconsistent with established practice on fixed networks and confusing to customers. The references relating to Cellnet and Vodafone require us specifically to investigate this matter. The reference relating to BT does not do so but, in his Statement accompanying the references, the DGT said that he would expect us to take the issue into consideration.

2.26. The DGT had also reviewed the termination charges made by Orange and One2One. While sympathetic to the concerns of consumers, the DGT had not considered the charges levied by Orange and One2One in 1997 to be unreasonable at the time in view of the fact that they were lower than those charged by Cellnet and Vodafone. By the time of the reference to us the DGT was proposing lower termination charges for Cellnet and Vodafone and he said he considered that the charges of Orange and One2One should be at the same level as those of Cellnet and Vodafone. This was because the DGT believed that consumers would benefit from a uniform rate for charges for fixed-to-mobile calls. This was particularly the case with number portability for mobile phones available from 1 January 1999. The DGT believed that it would also be appropriate if each FNO charged the same amount for calls to all mobile networks. The DGT said that he would consider whether any action was required on the termination charges of Orange and One2One in the light of our inquiry. These matters were not, therefore, included within the terms of reference relating to Cellnet and Vodafone.

2.27. In connection with the reference concerning BT's charges, the DGT told us that he considered tackling BT's retention to be important as almost 80 per cent of fixed-to-mobile calls originated on BT's network and BT's dominant position in the UK access network meant it acted as a price leader for other operators.

The public interest

2.28. The first question put to us by the DGT in the reference summarized in paragraph 2.2 is whether the matter specified in the reference (charges made by BT to its customers for calls to the Cellnet and Vodafone networks) operates, or may be expected to operate, against the public interest. If, in our opinion, the answer to this question is 'yes', then we are required by section 14(1)*(b)* of the 1984 Act to specify in our report the adverse effects of the matters referred to us. The second question put to us by the DGT is whether any adverse effects identified could be remedied or prevented by modifications to the conditions of BT's licence. If the answer to this second question is also in the affirmative then we are required by section 14(1)*(c)* to specify the modifications by which those effects could be remedied or prevented.

2.29. In determining whether a particular matter referred to us in this way operates, or may be expected to operate, against the public interest, we are required by section 13(8) of the 1984 Act to have regard to the matters in respect of which section 3 of the 1984 Act imposes duties on the Secretary of State and the DGT. Section 3 specifies the general duties of the Secretary of State and the DGT in carrying out their functions under Parts II and III of the 1984 Act. These duties are set out in full in Appendix 3.1. Section 3(1) summarizes primary duties, which in summary are:

(a) to secure that there are provided throughout the UK such telecommunication services as satisfy all reasonable demands for them; and

(b) to secure that any person by whom such services fall to be provided is able to finance the provision of those services.

Section 3(2) then specifies several other duties for the Secretary of State and the DGT which apply subject to the primary duties. In summary they are:

(a) to promote the interests of consumers, purchasers and other users of telecommunication services with respect to the prices, quality and variety of those services;

(b) to maintain and promote effective competition;

(c) to promote efficiency and economy;

(d) to promote research into and the development and use of new techniques;

(e) to encourage major overseas users of telecommunication services to establish places of business in the UK;

(f) to promote the provision of international transit services;

(g) to enable providers of telecommunication services in the UK to compete effectively in the provision of such services outside the UK; and

(h) to enable producers of telecommunication apparatus in the UK to compete effectively in the supply of such apparatus both in and outside the UK.

2.30. Although this report deals only with the reference concerning BT's charges, we take into account that the termination charges made by Cellnet and Vodafone, which are the subject of our separate reports, are a substantial part of BT's retail charges to its customers. Our conclusions and recommendations on Cellnet's and Vodafone's termination charges are included in those separate reports. But, where relevant, we take account of proposals affecting the level of termination charges in considering the matter referred to us in the BT reference.

2.31. In practice, the investigations for all three references were carried out in parallel by the same Group of members. Some of the evidence submitted related to all three references and most of the hearings covered all three. In the course of this inquiry we had extensive submissions from BT and the DGT (see Chapters 6 and 7) and held hearings with each of them; in addition we held a joint hearing which also involved Cellnet, Vodafone, Orange and One2One, together with representatives of telecommunications advisory committees. Two further hearings each were held with Cellnet, Vodafone, Orange and One2One. We also received much evidence from third parties generally, notably other providers of telecommunications services and representatives of users.

Competition

2.32. Our terms of reference relate only to BT's charges for calls to the Cellnet and Vodafone networks but to reach a conclusion on that it is necessary to begin by considering whether BT's charges on fixed-to-mobile calls generally are competitively determined. First, we summarize recent developments affecting competition for BT and indicate the views on competition put to us by BT, the DGT and other parties that made submissions to us.

Recent developments

2.33. Approaching 300 companies are now licensed to provide fixed network telephony (see paragraph 4.32). These include operators with national networks; cable operators with cables passing almost 50 per cent of UK homes and the capability to provide telephony services along with cable television; a rapidly growing number of resellers who lease network capacity from network operators in order to provide indirect call services to customers; and aggregators who can identify least-cost routing over the networks of a range of other operators. We use the term FNOs to describe all these categories of operators collectively.

2.34. In 1997/98 BT handled 122 billion call minutes, an increase of one-third compared with 1992/93 (91.4 billion call minutes). Local and national calls accounted for most of its traffic, 63.8 and 26.4 per cent respectively in 1997/98. Fixed-to-mobile calls accounted for only 2.3 per cent of its traffic in the same year but these types of calls have grown by 257 per cent since 1992/93, the largest increase of any single call type (see Table 4.1).

2.35. Table 4.8, which is based on BT's own data for call minutes, shows that in 1997/98 BT had high shares in each market segment, including a 74.1 per cent share of fixed-to-mobile calls. It has, however, lost share in each segment. Between 1992/93 and 1997/98 its share fell by 28.9 percentage points for international calls and between 13.4 and 14.4 percentage points for fixed-to-mobile calls, local calls and national calls.

2.36. BT has retained a larger share of call minutes for residential customers than it has for business customers. This is particularly true for national calls, fixed-to-mobile calls and international calls where BT's share in 1997/98 was between 16.5 and 35.7 percentage points higher for residential customers than for business customers.

2.37. However, BT has lost share of call minutes in each of the market segments for residential customers. Between 1992/93 and 1997/98 its share fell from 94.8 to 69 per cent for international calls, from 99.7 to 83.9 per cent for local calls and from over 97 per cent to over 82 per cent for national calls and calls-to-mobiles. Its share of call minutes for business customers also fell during this period: from 66.8 to 33.3 per cent for international calls, from over 82 per cent to over 62 per cent for national calls and fixed-to-mobile calls and from 92.2 to 80.8 per cent for local calls.

2.38. As these figures suggest, BT's competitors have to date had a particular focus on business customers and on areas such as international call traffic where margins are highest and the scope for competition is greatest. But BT submitted that the pattern was changing, with an increasing number of operators advertising to residential users and offering services over a wider range of call types. At the same time the volumes of certain types of call traffic, notably fixed-to-mobile calls and calls to the Internet, have been increasing very rapidly. Generally therefore the market in which BT operates is undergoing substantial change.

Views of the DGT

2.39. The DGT said that call termination on a mobile network, as on any network, was a bottleneck service, that is a calling customer had no choice but to use the network chosen by the called customer. In such circumstances he considered that charges should, as a matter of principle, be cost oriented to protect the customer. He recognized that there was scope for competition in the retail prices charged by FNOs for fixed-to-mobile calls, but he believed that BT was currently still a dominant operator in respect of retail services for a large number of customers. This fact was reflected in the current BT retail price control which was due to continue to 31 July 2001. As competition developed in the residential market, the need for controls of this type should decline as prices were forced down to a cost-reflective level. However, the DGT believed that time had not yet come, and that controls on BT's prices for fixed-to-mobile calls were currently necessary.

2.40. The DGT noted that BT (and the MNOs) argued that 86 per cent of fixed-to-mobile calls handled by BT were made by the highest-spending residential customers (those in the top two deciles, compared with those in the bottom eight deciles on whom the retail price control was focused) and business customers. A number of these operators had pointed out that, in setting the BT retail price control, the DGT had stated that the customers not directly included in the retail price control were benefiting from competition. Thus there should be no need for any form of price control on fixed-to-mobile calls, as only 14 per cent of all such calls were made by customers not benefiting from competition. The DGT believed this view to be wrong for two reasons. First, it was based on a misunderstanding of how the present retail price cap worked in practice.[1] Secondly, it assumed that the higher-spending customers were experiencing levels of competition on fixed-to-mobile calls similar to those which they enjoyed in the case of national and international calls.

2.41. The DGT told us that, in setting the retail price control, he had recognized that the top 20 per cent of residential customers spent a sufficient amount on national and international calls to attract strong competition. This group of customers, therefore, did not require the full weight of formal price cap protection. Further, their inclusion within the cap might give BT an incentive to focus the price cuts needed to comply with the control on them, so diluting the benefits of the price cap to those customers most in need of protection. The weights used in calculating the price cap were, therefore, those relating to the spending patterns of the lower-spending 80 per cent of residential customers. However, the control applied to prices for the main services consumed by all residential customers, so the top 20 per cent of residential customers also benefited indirectly.

2.42. The DGT said that he did not believe there was competition for any class of customers for fixed-to-mobile calls. In his view, it would be appropriate to limit the coverage of control on these calls to the lowest-spending 80 per cent of residential customers only if the higher-spending residential and larger business customers experienced a degree of competition in fixed-to-mobile calls similar to that which they enjoyed in national and international calls. But there was currently a lack of competition in relation to fixed-to-mobile calls. Much of the slow erosion of BT's market share was due to losses to direct access operators, which competed for the whole of the customer's bill rather than focusing on fixed-to-mobile calls. Indirect access operators currently accounted for only about 1 per cent of fixed-to-mobile calls minutes and there appeared to be limited prospect of their providing further competition in the future.

[1]See paragraph 3.47 for a summary of the retail price control.

2.43. Commenting on the suggestion that competition in fixed-to-mobile calls would develop in the same way as it had in the case of international calls, the DGT thought that international calls and fixed-to-mobile calls were different in a number of ways. By comparison with international calls, the profits made by BT per customer on fixed-to-mobile calls were relatively low, since individual customers made fewer such calls and BT's profit was confined to the retention element. The spend of individual customers on fixed-to-mobile calls was typically between 4 and 10 per cent of total call spend, with a maximum of 14 per cent; whereas international calls represented between 8 and 17 per cent of call spend for most customers, with a maximum of 32 per cent.

2.44. The introduction of international simple resale (ISR)[1] and the licensing of international facilities-based competitors had created the possibility of operators bypassing the incumbent operators at both ends of an international call. The DGT said that this contrasted with the position with fixed-to-mobile calls, where bypass of the MNO was not possible. Potential competitors could only resell the BT leg of the call and take a lower margin on this element of the call than BT. These operators still had to pay the same termination rate to the MNOs (which were bound by non-discrimination conditions in their licences) as BT did. The indirect operators' share of 1 per cent of all call minutes to mobile phones compared with their share of 15 per cent of international call traffic. The DGT considered that it would not be appropriate to regard the international market as a good guide to how competition might be expected to develop in the case of fixed-to-mobile calls.

2.45. The DGT was aware of the arbitrage opportunity represented by the diversion of calls to UK mobile networks via an international operator (known as 'tromboning'—see paragraphs 3.37 to 3.39). He did not believe that customers benefited significantly from such arrangements—the main beneficiaries were the ISR operators who carried the traffic. Only 5 per cent of the total interconnecting traffic to the MNOs in 1998/99 would be international traffic, not all of which would have been diverted from the UK. In any event the ability of operators to make use of the arbitrage opportunity was already under pressure. The DGT also noted that BT allowed the 10 per cent discount available under its 'Friends and Family' discount scheme (see paragraph 7.25) only on a single mobile number; nor could this number be chosen as the 'Best Friend' number and so qualify for a 20 per cent discount. The DGT questioned whether, if competitive pressure on BT was as strong as it claimed, discounts would be restricted in this way.

Views of BT

2.46. BT told us that fixed-to-mobile calls were offered by almost all its competitors and that overall the supply of fixed-to-mobile calls services was at least as competitive as the supply of other inland call types. BT separated the competition it faced into two types: operators who sought to compete over the entire range of services by offering savings on total spend, and operators who sought to compete specifically on the price of a particular service. Large users of telecommunications services were free to source their needs from one company or from more than one company for one or more services. The largest companies making significant volumes of fixed-to-mobile calls could and did bypass BT completely and connected directly with the MNOs. Users whose level of spend on fixed-to-mobile calls was not so great could nevertheless obtain significant savings by sourcing from more than one telecommunications company. BT told us that it was common for a company to source calls from alternative suppliers to BT; two-thirds of all international calls were already made in this way and there was no reason why the efforts of competing operators would go

[1]ISR is the business of collecting traffic from the public switched telephone network (PSTN) in the UK, switching it on to a leased line to another country over the international gateway which is operated by BT or CWC, and then into the public network in another country.

unrewarded in fixed-to-mobile calls. Increasingly, business customers made use of modern switches, which enabled them to select the least-cost route available for the delivery of calls, with operators ranked according to cost. One of the ways in which BT experienced the effects of competition was that it was relegated to lower positions on customer switches. While BT might not lose such customers altogether, it lost business as increasing volumes of calls were delivered by more highly-ranked operators.

2.47. BT said that there had also been growth in 'cherry-picking' competition, especially from new indirect operators. A key feature of such competition was the ease with which customers could choose to use the services of indirect operators on an ad hoc basis, without having to move away from their existing telecommunications provider. Whilst indirect operators initially focused on international calls, BT said that many now offered other call types, including fixed-to-mobile calls.

2.48. Telecommunication services were frequently, but not invariably, offered and demanded as a bundle of services, and if any one element of the bundle was subject to especially strong competition, then customers had an incentive to switch supplier for all telecommunications needs, even though the prices and quality of other components of the bundle remained unchanged. According to BT, its experience had been that competitors often marketed their bundle of services by reference to savings over an existing BT bill rather than by advertising specific call reductions.

2.49. BT also pointed out that price was not the only determinant of competition. A recent survey by the Telecommunications Managers' Association (TMA) had stated that overall quality of service was of paramount importance to business customers when deciding on a new supplier or extending an existing contract. Furthermore, regulation operated alongside the competitive pressures on BT's prices at all levels in the market place. Condition 17 of BT's PTO licence which required it not to show undue preference or undue discrimination in practice acted as a transmission mechanism: if BT wished to make a competitive response on any service, including fixed-to-mobile calls, the benefit of that response had to be shared with all customers in a way which was not unduly discriminatory.

2.50. BT told us that all these competitive factors constrained its freedom to set its retention on fixed-to-mobile calls. Since 1996 its retention on these calls had fallen by 23 per cent. This fall had been accompanied by an increase in competitors' market share for fixed-to-mobile calls from around 30 to 37 per cent for business calls and from 15 to 18 per cent for residential calls. BT considered that, taken together, these factors pointed to a part of the telecommunications market which was exposed to competition and certainly no less so than for other inland calls.

2.51. As for the future, BT considered that few observers would question that the UK telecommunications market would become more rather than less competitive. The roll-out of cable companies' networks was continuing; technology was reducing the price of least-cost routing; new operators were entering the market; the market in terms of business minutes was growing at about 10 per cent a year, and of this, fixed-to-mobile calls was the fastest-growing segment at about 35 per cent a year. Growth in fixed-to-mobile calls was largely determined by mobile phone ownership which was growing at nearly 25 per cent a year. It was safe to assume continuing high growth in fixed-to-mobile calls making it an increasingly attractive part of the market for BT's competitors. There would also be significant expansion in the residential sector. As the volume of fixed-to-mobile calls grew, those calls would account for a larger part of customer spend and demand for such calls was therefore likely to become increasingly price sensitive.

Views of mobile network operators

2.52. Cellnet told us that there was an active market in the UK for the origination of calls. Such competition acted both at the level of network infrastructure and service providers using indirect access over BT's network. In Cellnet's view all these players should be able to set their prices as they saw fit. Innovative price packaging would give rise to a range of customer options.

2.53. Vodafone said that retail prices for fixed-to-mobile calls were set by the FNOs or by resellers using indirect access numbers to offer call origination services. There was a certain amount of competition, actual or prospective, between them on the retail prices charged for fixed-to-mobile calls. Although all FNOs and other retailers enjoyed the benefit of a non-discriminatory charge for interconnection with the MNOs, there was considerable variation in the retail charges themselves. Vodafone said that the market continued to be dominated by BT and, in setting its retail mark-up, BT could effectively mask the underlying competitiveness of the MNOs' charges for terminating calls. The MNO offering interconnection had no leverage to constrain BT's fixing of its retail mark-up. On the other hand Vodafone noted that 86 per cent of calls from the BT network terminating on the mobile networks came from the unregulated sector of the market, which was regarded as competitive. In Vodafone's view it would be a retrograde step to reintroduce price regulation into the retail market for just one particular type of call; it was better to rely on the benefits of competition. Other retailers should be free to set their prices for fixed-to-mobile calls in competition with BT.

2.54. Orange said that there was some degree of competition in the retail charges made for fixed-to-mobile calls, but competition was limited by the presence of BT as a dominant, near monopoly, player. Competitive forces would intensify over time as mobile customers began to use their mobile phones as their primary or sole point of contact, but until they did so it was important to regulate BT's retail margin on fixed-to-mobile calls to ensure that it remained cost reflective. Orange said that it had been requesting OFTEL to take this action since March 1992. Regulating BT's margin would ensure that any changes in the termination rates of MNOs would be reflected immediately and proportionately in the retail rate charged to callers from fixed networks. Orange said that at present it was not clear on what basis BT set its retail rates. There was some evidence that BT set the same retail rate even where the termination rates charged by MNOs differed. More importantly, the retail margin retained by BT on fixed-to-mobile calls was, in the view of Orange, excessive, being significantly greater than the retention on calls to fixed networks despite the similarity in the work performed by BT.

2.55. Orange noted that, in theory, BT faced competition from a large number of FNOs which were free to set their own retail prices for fixed-to-mobile calls, but that, in practice, BT set the 'guiding' price for these calls which was largely followed by other operators. Some operators diverged from BT's prices, but most did not do so significantly, mainly because they did not feel the need to do so as there was a lack of customer pressure on the price of fixed-to-mobile calls.

2.56. One2One said that the proper focus for our inquiries on the three references should be on the fixed call origination market and on BT's retail margin within the rate it charged its customers for fixed-to-mobile calls. BT was dominant in this market and over 70 per cent of fixed-to-mobile calls originated on BT's fixed-line local loop network. This meant that BT had the ability to set retail margin levels that prevented mobile telephony from becoming a competitive alternative to fixed lines. According to One2One, BT's margin could amount to up to 38 per cent of the retail charge which a fixed network customer paid to call a mobile network. If the MMC were to find that BT had abused its dominance in the fixed call origination market in setting its retail rates then regulation of BT would be desirable.

Views of other parties

2.57. The views of other parties which gave evidence to us are summarized in Chapter 8. Several FNOs took the view that competition was emerging and would develop further, hence there was no requirement for regulation. However, the following further comments were made:

(a) ACC Telecom said that there was no need for detailed regulation to reduce BT's retention rates on fixed-to-mobile calls as these would be subject to increasing competitive pressure once termination charges had been reduced to truly cost-reflective levels.

(b) AT&T (UK) Ltd did not consider that the level of retail charges for fixed-to-mobile calls should be regulated. The consumer's interests were best served by sustainable competition; and competition for mobile call origination would naturally force down retail prices.

(c) CWC said that the UK telecommunications industry was in the process of changing from being dominated by one FNO towards being a fully competitive market. In the retail market for fixed-to-mobile calls, users had a variety of options for the origination of such calls. In CWC's view, the thrust to reduce costs should be made in termination charges, not through the regulation of fixed operator margins which were subject to significant competition.

(d) Energis Communications Limited said that its market strategy was to offer innovative services at prices below those charged by BT. Other service providers were also able to exert some competitive pressure on BT to reduce charges. When the cable companies were strong enough to offer really effective competition there would be no need for regulation of BT's charges, but until then regulation was needed.

(e) Telewest Communications plc did not agree with OFTEL's proposal that BT's retail prices for fixed-to-mobile calls should be reduced through regulation. The company believed that this approach would undermine and compromise the whole concept of local infrastructure-based competition in the provision of calls.

2.58. Among representatives of users the comments included the following:

(a) BAA Plc said that it was unable to see how the delivery of calls by BT to the mobile networks could possibly cost BT more than the cost of terminating a call on a fixed network.

(b) The Telecommunications Users' Association found it difficult to accept that the costs of a fixed operator in forwarding calls to a mobile network were any greater than those to forward a call to another fixed-line operator or onward into its own network; yet BT was taking in excess of 60 per cent more for handling fixed-to-mobile calls.

(c) The TMA said that BT's retention rate for a call to a mobile phone was too high and noted that when a call was from a BT phone box, the retained portion could be as high as 120 per cent of the portion passed to the mobile operator. If there was any difference at all between the cost of handling a call to another fixed network and one to a mobile network, it was unlikely to be significant.

(d) The Consumers' Association commented on the need for better information for callers to mobiles, drew attention to BT's dominant position in the origination of

fixed-to-mobile calls and pointed out that BT's retail uplift on these calls was higher than for comparable inland calls even though the network elements were identical.

Analysis (competition)

2.59. The evidence on competition that has been submitted to us falls broadly into four areas: the recent trend in BT's share of fixed-to-mobile calls; actual and potential competitors; the evidence of price competition and price sensitivity; and actual trends in BT's prices and retention. We consider each of these areas in turn.

BT's share of fixed-to-mobile calls

2.60. First, as we show in Table 4.8, although BT's share of fixed-to-mobile calls, in terms of call minutes, has been declining in recent years, it remains substantial. With some three-quarters of the total volume of fixed-to-mobile calls, 66 per cent of calls by business users and 83 per cent of calls by residential users, BT's position is at the very least one of considerable strength.

2.61. The speed at which BT's position is likely to be eroded is a matter of some conjecture. BT suggested that competitors that initially concentrated on the lucrative international call business were increasingly including fixed-to-mobile calls in their package of services. It argued that only marginal costs were incurred where these operators added fixed-to-mobile calls to an existing portfolio of services and that the existing customer-supplier relationship overcame any customer inertia and reduced switching costs.

2.62. On the evidence of advertisements submitted to us, it is clearly the case that a number of operators are now offering fixed-to-mobile calls alongside international calls. But the extent to which these operators will be successful in winning market share from BT remains to be seen. There is as yet no solid evidence that the pattern of competition for fixed-to-mobile calls will follow that for international calls. BT's share of fixed-to-mobile calls has declined at broadly the same rate as its share of national and local calls—far slower than is the case for international calls. At the present rate of decline, BT's share of fixed-to-mobile calls is likely to remain over 50 per cent in both the business and residential sectors for at least the next three years.

Competitors

2.63. BT's most established competitor, CWC (which includes Mercury—see paragraph 2.5), made little impact on BT's share of fixed-to-mobile calls in the five-year period to March 1998 (see Table 4.7), beginning and ending the period with a share of around 10 per cent. Cable operators have made some impact but their overall share has increased slowly. Moreover, as only 50 per cent of households in the UK are currently passed by cables, there are clearly limitations to the share of fixed-to-mobile calls that the cable operators can reasonably be expected to win, at least in the short term.

2.64. A more rapid rate of penetration has been achieved by indirect access operators, resellers and aggregators. However, the impact of BT's competitors has been predominantly in the area of international calls as evidenced by BT's substantially reduced share of these calls.

2.65. BT told us that achieving a change to the present international accounting rates that gave rise to the anomaly in termination rates on ‘tromboned’ fixed-to-mobile calls (see paragraphs 4.55 to 4.62) would not be straightforward and might take some time. It therefore envisaged that low termination rates would continue to apply to these calls, giving its competitors an attractive margin within which to compete. However, the MNOs clearly do not regard the present situation as permanent. Vodafone told us that it had agreed in principle with CWC that calls from overseas operators should in future be charged the standard termination rate for calls made direct from UK fixed lines and that it was seeking a similar understanding with BT. Cellnet told us that it was actively discussing with BT and other European operators how international accounting rates for calls from overseas operators could be ‘de-averaged’ so as to allow for higher charges for calls to mobile phones. The DGT considered that the awareness of the issue in international fora and the commercial driver for a solution were such that matters were likely to come to a head in months rather than years.

2.66. We therefore believe that BT is going to be under increasing pressure from the MNOs to raise its payment for the termination of internationally-routed fixed-to-mobile calls to a level more consistent with charges for domestically-routed calls. Indeed it has already taken steps to curtail the volume of apparently ‘tromboned’ fixed-to-mobile calls entering the UK on lines from the USA (see paragraph 6.15). The ability of BT’s competitors to continue to offer prices based on artificially low termination rates is therefore at best uncertain and we do not regard the current rate of penetration of competitors engaged in this traffic as a good guide to the future.

Price competition and price sensitivity

2.67. BT nevertheless put it to us that fixed-to-mobile calls were already subject to at least as much competition as other inland calls and that a high proportion of these calls was made by users who were price sensitive and who shopped around for better deals (see paragraph 4.30).

2.68. We have looked at a number of factors that might indicate the extent of price sensitivity and price competition affecting BT’s charges for fixed-to-mobile calls.

2.69. First, we consider the effects of the substantial increases in termination charges introduced by Orange and One2One, and reflected in BT’s retail charges, in February 1997. As we show in Table 4.6, and Appendix 4.2, not only did Orange and One2One increase their termination charges, by over 100 per cent in the case of peak and evening rates, but also BT passed the increase on in full in its retail charge and at the same time increased its own retention substantially. Orange told us that this had no noticeable effect on its incoming call volumes immediately after the increase and, as Table 4.7 shows, the total volume of fixed-to-mobile calls handled by BT rose by some 30 per cent between 1996/97 and 1997/98. One2One, which increased its rates at the same time as Orange, told us that it had previously set these charges below cost because the coverage and quality of its network would not sustain higher rates. By the time the charges were increased, the quality of its services had improved substantially and this explained why the increase had little impact on call volumes. It was also put to us that the overall rate of increase in call volumes might mask the effects of the 1997 price increases and that, as charges for calls to the Orange and One2One networks remained below those for calls to the Cellnet and Vodafone networks, the effects of the price increases on their share of call volumes would be to some extent mitigated.

2.70. However, we have considered the arguments put to us in some detail (see paragraphs 4.192 to 4.215) and we believe they do not diminish the weight of the evidence we received from Orange that research it carried out before the price increases indicated a lack of consumer sensitivity to the level of termination charges (see paragraph 4.215). Nor do they entirely explain how such major increases can be introduced, together with an increase in BT's retention, with no perceptible effect on demand. At the very least, the February 1997 price increases call into question whether fixed-to-mobile callers in general were at the time sufficiently price sensitive to place an effective constraint on BT's retention.

2.71. We also consider it relevant that BT was willing, for several years, to accept a higher termination charge than had been determined by the DGT for calls from CWC subscribers to the Cellnet and Vodafone networks; and also that CWC had agreed to accept an increased termination charge from Cellnet and Vodafone in the course of negotiations at the end of 1997.

2.72. BT told us that the reason it did not seek a determination between 1991, when the original determination was made for CWC, and 1996 was that its contracts with Cellnet and Vodafone during this period prevented the resolution of disputes in this way. They provided for arbitration but, in view of Cellnet's and Vodafone's insistence that the charges determined for CWC were below their costs, BT considered arbitration to be a lengthy and uncertain process. Although the renegotiation of BT's contracts with Cellnet and Vodafone in 1996 led to the removal of the restriction on its ability to seek a determination, BT considered that it had by then been encouraged by OFTEL to seek a negotiated settlement with the MNOs. CWC told us that its objective was to achieve an adequate return on its costs, a large proportion of which were fixed, taking all its services together. It had agreed to accept higher termination charges as part of a package of new arrangements with Cellnet and Vodafone and they were offset by favourable terms for other parts of the CWC business.

2.73. Although BT was contractually constrained from seeking a determination on Cellnet's and Vodafone's termination charges between 1991 and 1996, we find its reasons for not going to arbitration less persuasive. The outcome of arbitration can be uncertain and it is understandable that BT, like any other company, would not go into it lightly. However, against the background of the DGT's determination, an aggressive fixed-line operator, under pressure from competitors to improve its offering to subscribers, might have been expected to take whatever opportunity arose to secure a potentially substantial reduction in its costs. In our view, the most likely reason that BT did not do so is that it did not feel that its retail charges for fixed-to-mobile calls were under sufficient competitive pressure to justify such action.

2.74. CWC's agreement to accept higher termination charges is more recent. We have no reason to doubt that the new arrangements were on balance to CWC's commercial advantage. We also believe it is reasonable to conclude that CWC factored in the effects on its ability to compete for business on fixed-to-mobile calls when accepting a substantial increase in the costs of termination. However, the fact that it was prepared to accept such a package, at the very least, raises questions about the intensity of the competition on fixed-to-mobile calls relative to the other areas of CWC's business.

2.75. These doubts are reinforced to a degree by the results of a consumer survey carried out by the MMC for the purposes of this inquiry and the related inquiries on Cellnet's and Vodafone's charges. Consumer surveys have particular limitations in testing responses to hypothetical situations and we consider that the results provide us with only a broad guide. However, they suggest that most fixed-line users have very little sensitivity to changes in charges for fixed-to-mobile calls. Table 4.32 shows survey results relating to those fixed-line users that make fixed-to-mobile calls but are not themselves subscribers to a mobile network. Of this group (who make the majority of fixed-to-mobile calls), only 9 per cent said that a

10 per cent fall (or less) in charges would affect the number or length of calls they made and 53 per cent said that a fall in charges would have no effect. The fact that it is more expensive to call a mobile phone is well understood and a significant majority of respondents to our survey said that they only called a mobile phone when there was no other option (see Table 4.26). Another factor that may contribute to the lack of price sensitivity on the part of fixed-line users is that charges for fixed-to-mobile calls are still a small part of their overall telephone bill (see Table 4.10).

2.76. BT submitted (see paragraph 6.18) that the proportion of a customer's overall telephone bill accounted for by fixed-to-mobile calls was not a relevant issue for competitors in deciding whether to compete for the business or not. It also suggested that fixed-to-mobile calls business could be lost to competitors offering overall savings on a package of call types whether or not the savings related specifically to fixed-to-mobile calls, and that this acted as a constraint on the pricing of all call types. However, it remains our view that competition is likely to be strongest on those services that are either of sufficient importance in their own right to be 'cherry-picked' by competitors or are at least a sufficiently important contributor to the user's overall bill to be a potential cause for network switching. For the generality of users, we are not convinced that fixed-to-mobile calls yet fall into either category.

2.77. The position in the business sector may be different. On the face of it, the fact that BT's share of fixed-to-mobile calls in this sector is lower than in the residential sector suggests a greater degree of competition on charges for these calls. But the position is not entirely clear-cut. The DGT told us that, in his view, whereas competition from indirect access operators had provided high-spending residential customers and multi-line business customers with a high degree of protection from excessive prices on international and national calls, these operators did not appear to be acting aggressively on fixed-to-mobile calls. Although BT provided case studies of business customers that were considering changing networks because of charges for fixed-to-mobile calls, in no case was it evident that the cost of fixed-to-mobile calls was the decisive factor (see paragraph 4.29). It seems possible therefore that BT's loss of share in the business sector is at least partly explained by large customers switching whole packages of services to other operators on the strength of competitive offerings on international calls or national calls rather than as a result of direct price pressure on fixed-to-mobile calls.

2.78. While we accept that there is significant and increasing competition in the business sector for telecommunication services in general, there is, in our view, considerable room for doubt as to how far this is currently directed at fixed-to-mobile calls.

2.79. BT emphasized to us that, in so far as charges to business users were exposed to effective competition, provisions in its licence prohibiting undue discrimination ensured that residential users also benefited. However, it is not clear that residential users would benefit from the same charges as business users. Although the DGT questioned a discount scheme proposed by BT, he has recently announced that in his view it appeared reasonable for BT to give discounts to business customers in certain circumstances (see paragraph 4.31). While it therefore seems likely that the undue discrimination provisions may place some constraint on BT's ability to offer different terms to large and small users, it certainly cannot be assumed that charges to smaller users will necessarily track those offered to large businesses.

Trends in BT's prices and retention

2.80. BT submitted, as evidence of competitive pressure, that its retention had declined by 23 per cent since 1996. However, we believe that must be seen against the background of an increase of around 100 per cent in BT's retention at the beginning of 1996, an increase of 43 per cent in the volume of traffic carried by BT since 1996 and a decline of 30 per cent or more in peak termination charges by Cellnet and Vodafone over the same period (see Tables 4.5 and 4.6 and Appendix 4.1).

Conclusion on competition

2.81. The DGT told us that, in his view, reductions in charges for fixed-to-mobile calls since 1996 had been driven more by the threat of regulatory action than by competitive pressure. On our analysis this seems the most likely explanation of recent cuts in BT's retail charges. We consider it unlikely that competitive pressures are as yet sufficient, by themselves, to constrain BT's retail charges or the level of its retention.

2.82. However, it is clear that competition is developing. BT noted that new operators had been entering the telecommunications market at the rate of three a week. These operators will not inevitably target fixed-to-mobile calls, particularly if, as we suspect, the option of 'tromboning' is eliminated. But it would be commercially logical for them to extend their portfolio of services into fixed-to-mobile calls and other types of calls in the longer term, having established themselves in the currently more lucrative international calls section of the market. Moreover, with the volume of fixed-to-mobile calls growing at the rate of one-third a year over the last three years, this type of call is likely to become an increasingly important part of the consumer's overall telephone bill and, as such, may become a more important factor of competition between FNOs. The uncertainty over the extent to which current and future competition for BT rests on 'tromboning' makes it difficult for us to predict the speed with which BT's currently strong position will be eroded. On current evidence we consider it unlikely that competition will be strong enough to act as an effective constraint on BT's prices within the next three or four years. But the pace of change is such that it is possible that the position thereafter will be very different. We do not therefore have an expectation that competition will be insufficient to constrain BT's charges beyond the next three or four years.

2.83. We turn now to the question whether BT's charges for calls to the Cellnet or Vodafone networks are in practice operating against the public interest.

BT's retail charges

2.84. BT's retail charge for fixed-to-mobile calls is based on five main constituents: BT's payments to the MNOs for the termination of calls delivered to their networks (payments to OLOs, or 'POLOs'), the cost to BT Retail of using BT's network to deliver calls to the mobile network (the 'network costs'), BT's retail costs, a provision for the deficit which BT incurs on its access business (the 'access deficit') and BT's return. Table 2.1 shows the various elements of BT's charges for different types of call using information contained in BT's accounting separation statements for 1997/98.

TABLE 2.1 **BT: composition of BT's charges for different call types, 1997/98**

	Local	*National*	*International*	*Mobile*
				ppm
Turnover	2.54	4.57	19.63	23.02
POLO	(0.19)	(0.13)	(6.06)	(17.22)
Turnover less POLO (retention)	2.35	4.44	13.57	5.80
Own network charges	(0.78)	(1.15)	(3.32)	(0.77)
Retail costs	(0.41)	(0.73)	(2.89)	(3.29)
Return (including access deficit)	1.16	2.56	7.36	1.74
				per cent
Return on:				
Turnover	45.7	56.0	37.5	7.6
Turnover less POLO	49.4	57.7	54.2	30.0
Call minutes (m)	77,890	32,200	6,517*	2,852

Source: BT.

*Includes incoming traffic (3,597 million minutes) and outgoing traffic (2,920 million minutes). Ppm data have been calculated using all call minutes, but retail costs accrue mainly in respect of outgoing calls.

2.85. In order to arrive at a view as to whether BT's retail charges for calls to the Cellnet and Vodafone networks operate against the public interest we need to consider each of the constituents of the charges in turn. BT also recovers VAT from its customers and in some circumstances allows discounts from its charges. Our analysis looks at BT's charges before VAT but after allowing for discounts. As the issues to be considered do not differ as between calls to the different mobile networks, we have based our analysis throughout on BT's costs and return relating to calls to all four mobile networks.

Payments to other licensed operators

2.86. Some 75 per cent of BT's retail charge for fixed-to-mobile calls is accounted for by POLOs. Charges made to BT and other FNOs by Cellnet and Vodafone are the subject of our separate reports. Irrespective of our finding on that matter, we do not consider it to be against the public interest for BT to recover those charges from its own customers. POLOs are not therefore considered in detail in this report. The size of the POLOs does, however, have implications for certain other aspects of BT's costs and for the measurement of BT's return and we return to this matter in paragraph 2.127.

Network costs

2.87. As we note in paragraph 2.16, the charges made by BT's Network business, both to BT's own retail business and to other FNOs who use BT's network, are subject to price control under the NCC. The present NCC was introduced in 1997 and we have not considered it necessary for the purposes of this inquiry to review the charges made by BT Network in detail. However, there are two matters connected with network costs on which we need to take a view.

2.88. First, the basis on which BT's network costs are calculated was changed midway through 1997/98 and we need to consider what level of cost it would be appropriate to use as the basis for forecasting BT's current and future costs. There are two elements in the average charge made by BT Network to BT Retail's fixed-to-mobile activity. The first element is the charge for actual call conveyance for which BT Retail pays the same prices as other operators, as required by BT's licence; in 1997/98 these charges amounted, on average, to 0.63 ppm. The second element is BT Network's charge for certain non-chargeable services (such as emergency calls), product planning and management and BT Retail's use of the network in operating its own business; in 1997/98 these charges amounted to 0.14 ppm. The call conveyance aspect involved charges on two different bases. In the first six months of the year the calculation of the network charges was by reference to FAC, while in the second six months, following introduction of the new NCC, the charges were by reference to LRIC which produced charges on average 10 per cent lower than those by reference to FAC.

2.89. It appears to us therefore that in considering whether the 1997/98 charges represent a level reasonably justified by cost, strictly we should have regard to the newer LRIC-based charges rather than to the hybrid basis which actually applied in the year. Recognition of this factor reduces own network costs to 0.73 ppm from 0.77 ppm. However, increases in network costs for items such as non-chargeable services, product planning and BT Retail's own use of the network have raised the figure to 0.76 ppm. In view of the small amount of the alteration and the possibility of fluctuations in the level of the non-conveyance costs that are allocated to each activity, we consider it acceptable to use the average figure of 0.77 ppm as the basis for our further calculations.

2.90. Secondly, BT put it to us that, if its charges for fixed-to-mobile calls were to be properly reviewed, it would be necessary to take into account the fact that the additional load on network facilities in the set-up phase of fixed-to-mobile calls was not currently reflected in BT's charges for these calls. Under the present regime for network charges, all call conveyance is charged for on a per-minute basis, with no recognition of whether the network use is for call set-up or call hold during the remainder of the call. Since all calls require the same set-up irrespective of duration and since the average length of a fixed-to-mobile call is shorter than that of an inland call, it would follow that the conveyance cost for such calls is understated. According to BT the effect of a move to a two-part tariff charging basis would add 0.295 ppm to the conveyance charge for fixed-to-mobile calls in 1997/98. We accept that there is some validity in the case made by BT, though the exact quantification of the effect involves judgments over the apportionment of functions within switches.

2.91. We employed our own consultants to give advice to us on technical matters in the course of the inquiry and while their calculations provided a figure slightly lower than that of BT (see paragraph 5.42 and Appendix 5.7), the difference was not sufficiently great to lead us to reject BT's calculations. We note that the average length of fixed-to-mobile calls has been increasing in recent years and though the average length of local calls is also increasing as a result of increased use of the Internet, the increase in fixed-to-mobile calls is more marked. If this trend continues the size of the call set-up adjustment on fixed-to-mobile calls should progressively diminish. We return to this subject later when considering the likely trend of BT's costs in future years (paragraphs 2.122, 5.54 and Appendix 5.7).

Retail costs

2.92. We now turn to BT's retail costs. These were the main focus of the DGT's concerns about BT's charges. We therefore begin by summarizing the concerns of the DGT and the views of BT.

Views of the DGT and BT

2.93. The DGT told us that early in his investigations the level of BT's retention on fixed-to-mobile calls had been identified as being well in excess of its retention on other call types on a ppm basis. In order to understand the reasons for this a more detailed look had been undertaken at the costs involved. It was at this stage that the extensive use of turnover as a means of attributing retail costs had been identified as the main cause of high unit costs in BT's calls to mobile activity for most cost headings. In addition the DGT identified an element of circularity where high turnover led to a high allocation of retail costs thus justifying a higher retail price. The DGT considered that the attribution methods used by BT were in conflict with the key regulatory accounting principle of cost causality built into the Accounting Documents which, under BT's licence, governed the regulatory accounting framework. Although he was required to agree changes in the Accounting Documents, the detailed methodologies for cost attribution were contained in a separate document, which did not require his approval. The DGT believed that the principle of cost causality should be followed as far as possible by BT in identifying appropriate bases for cost attribution. The DGT's investigations indicated that BT could go much further in identifying appropriate cost drivers before resorting to more arbitrary bases of attribution. Particular examples to which the DGT drew our attention included bad debts, marketing and sales.

2.94. The DGT considered that BT had failed to explain satisfactorily and to justify adequately its retail costs attributed to fixed-to-mobile calls. In 1996/97 these had amounted to 4.06 ppm, compared with 0.50 ppm for inland calls and 0.55 ppm for inland plus fixed-to-mobile calls. There appeared to the DGT to be no reason why retail costs for fixed-to-mobile calls should vary significantly from those for other call types. The DGT said that he had examined each of BT's categories of costs and he believed there was little evidence to support a greater retention on fixed-to-mobile calls than on calls to fixed lines although he had not proposed alternative allocations in detail to those in BT's Accounting Documents.

2.95. In one analysis, the DGT relied on broad comparisons with inland calls. Using the average retail costs in 1996/97 for inland calls and fixed-to-mobile calls of 0.55 ppm, and adding 0.07 ppm for a return on capital of 12.5 per cent, the DGT arrived at a 'retention' for retail costs of 0.62 ppm. He said that if BT could argue successfully for higher costs for fixed-to-mobile calls in some cost categories, it would increase the cost-based 'retention' for retail costs to approximately 1 ppm.

2.96. BT emphasized that the allocation of retail costs took place within a wider regulatory framework overseen by the DGT. It considered the Accounting Documents setting out the methodologies for cost attribution to have been agreed by the DGT. If alternative allocations of retail costs to fixed-to-mobile calls were under consideration, then these would have repercussions elsewhere in BT. A reduction in retail costs allocated to fixed-to-mobile calls, for instance, would imply greater retail costs in local and national calls, recovery of which would require higher charges for those call types. Since prices for a substantial part of local and national calls were covered by the retail price control, some amendment of the control would be necessary. However, the DGT told us that, if the allocation of retail costs was changed, with the displaced costs falling on other types of call included within the basket for the retail price control, the sums involved would not be sufficient to lead him to reopen the price control. This was because, if a different allocation method had been used when BT's retail price was set, it would not have resulted in either a different fall in the initial price or a different value of X in the RPI–X formula (see paragraph 5.62).

2.97. BT told us that its case on cost attribution was that the costs of any of its services, including fixed-to-mobile calls, which could be allocated on the basis of cost causality should be so attributed. In many cases a driver could be identified and, in some of these cases, turnover was the basis of causality. For some other costs, typically some of the common costs, it was more difficult to identify the true cost driver. BT accepted that there was no unique accounting procedure that determined how these costs should be attributed, but it was BT's view that relevant turnover was generally the best proxy for the true cost drivers.

2.98. BT told us that it had a sophisticated and detailed accounting structure based, so far as possible, on the principle of cost causality. In support of its position BT provided two reports by accounting consultants. The consultants confirmed that in some cases turnover could be regarded as the wholly appropriate attribution method and that in others it was a reasonable basis as there was no obviously better one. BT said that there was no reason why costs, expressed in ppm terms, should not exhibit disparities as between fixed-to-mobile calls and other types of call. Turnover did drive significant elements of cost and this would be reflected in a different retail cost per minute.

Analysis

2.99. We set out in Table 2.2 the allocation of 1997/98 retail costs between different call types that results from the methodology currently used by BT.

TABLE 2.2 **BT: comparison of retail costs for different call types, 1997/98**

ppm

	Local	*National*	*International*	*Mobile*
Call volume (m minutes)	77,890	32,200	6,517*	2,852
Retail operating costs:				
Field sales force				
Publicity				
Other marketing				
Bad debts				
Debt collection costs				
Billing costs				
PO handling				
PO commission				
Other finances and billing				
Computing	*Figures omitted. See note on page iv.*			
General management and other				
Customer service				
Depreciation				
Personnel and administration				
Planning and development				
Redundancy				
Interest				
Other costs				
Rounding				
Total	0.41	0.73	2.89	3.29

Source: BT.

*Includes both outgoing (2,920 million minutes) and incoming (3,597 million minutes) calls. Ppm data have been calculated using all call minutes, but retail costs are accrued mainly in respect of outgoing calls.

2.100. As Table 2.2 shows, the costs allocated by BT to the retailing of fixed-to-mobile calls are, in terms of costs per minute, eight times the costs allocated to the retailing of local calls and more than four times the costs allocated to the retailing of national calls.

2.101. We raised with BT the extensive use of turnover as an attribution basis for costs. The turnover per minute of fixed-to-mobile calls was substantially higher than for other types of call, primarily because of the much higher POLOs. As a result, the use of turnover for cost attribution purposes meant that the retail costs allocated to fixed-to-mobile calls were disproportionately high. In response to our concerns, BT provided us with an alternative allocation of the 1997/98 retail costs of fixed-to-mobile calls which reduced the retail cost allocation from £94 million to £66 million (a reduction from 3.29 ppm to 2.30 ppm). This exercise involved the use of turnover net of POLOs and of call numbers to supplement turnover as attribution bases. Later, BT carried out a further exercise in which some costs were allocated by reference either to turnover or to call numbers, with the remaining costs allocated using equal proportionate mark-up (EPMU).[1] BT said that EPMU was the allocation basis included in the Interconnection Directive,[2] though in fact the Interconnection Directive did not directly apply in this case. The resulting allocation of retail costs to fixed-to-mobile calls was £54 million (1.90 ppm).

2.102. In view of the general uncertainty over the appropriate basis for cost allocation we reviewed the retail costs on an item-by-item basis in order to identify those costs where there was a reasonably clear attribution basis. The approach we adopted was that where BT was able to demonstrate a convincing case for a particular cost attribution on the basis of specific cost drivers, we should accept it, but that in the remaining cases, some other basis should be found (see paragraphs 2.107 and 2.108). Drawing on the most recent alternative allocation proposed by BT (which resulted in retail costs of 1.90 ppm), the cost allocations fell into four categories: costs linked to turnover, those linked to the number of calls, those linked to other specific factors such as profitability and the remaining common costs. Although BT continues to work on the details of attribution methods, we consider—as does the DGT—that there is not yet sufficient information for a comprehensive cost attribution system. The DGT told us that he would be discussing the position further with BT in order to update, if required, the Accounting Documents and their subsidiary statements of method.

2.103. BT had attributed £19.1 million of retail costs to fixed-to-mobile calls using turnover. The main constituent items were bad debts of £[✄] million and part of the field sales force whose remuneration was partly based on the achievement of sales targets. We agree that there is a definite link between turnover and bad debts (and some associated items such as debt collection costs), though the evidence that the link is an exact one for all call activities is inconclusive. We are unable to agree that the attribution of part of the sales force by reference to turnover is an appropriate one. We recognize that BT has chosen to link its field sales force bonuses to sales targets, but that does not, in our view, automatically make it an acceptable attribution methodology when assessing the public interest, or necessarily in the best interests of shareholders. Profitability or value added might in general be defensible on causal allocation grounds, though neither is completely straightforward to implement (see paragraphs 2.107 and 2.108). In some cases, turnover can act as a reasonable proxy for this but not in the case of fixed-to-mobile calls because they attract a much higher POLO than other types of call.

2.104. The categories of cost where BT had used call numbers included computing, billing, planning and development and customer service, amounting in total to £14.6 million. In the case of these items we accept that volume of traffic is a significant factor determining the spend by BT. For instance, with itemized billing (and the associated computing costs) the number of line items on the bill is a measure of the activity involved. Since the average duration of fixed-to-mobile calls is currently less than that of inland calls, attribution of costs by

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[1]EPMU involves the allocation of common costs between different activities in the same proportions as other costs for which direct bases of attribution have been identified. This means that the percentage mark-up for common costs on the directly attributed costs of each activity is the same.

[2]Directive 97/33/EC, OJL 199/32, 26.7.97.

call numbers results in a higher allocation per call minute to fixed-to-mobile calls than to local or national calls, but we believe that this is nevertheless a reasonable reflection of a special feature of fixed-to-mobile calls.

2.105. The only item which was related to profit was a small amount of interest received (£0.8 million). BT had allocated interest received in its accounting separation statements on the basis of past profitability on the grounds that the funds invested represented retained profit. We accept that this is a reasonable procedure in the circumstances.

2.106. BT's other retail costs include the costs of general management, customer service, depreciation, personnel and administration, planning and development and redundancy. Under BT's methodology these costs are substantially allocated between activities according to the level of staff costs. The level of staff costs is largely determined by the costs of sales staff which in turn is significantly influenced by turnover. We are not convinced that, in terms of the tasks involved in, or resources consumed by, the activities to which these costs relate, there is any material difference between the retailing of fixed-to-mobile calls and the retailing of local or national calls. However, we considered with BT a number of possible general methodologies for allocating these costs between call types.

2.107. First we considered a BT proposal that they should be allocated on the basis of EPMU. However, in this instance, the direct cost attribution which provided the basis for applying the EPMU to the remaining common costs included substantial elements where there was a disproportionate attribution (for example, by reference to turnover and call numbers) to fixed-to-mobile calls. While the direct attributions themselves may be justified, it appears to us that to accept them as a basis for the allocation of other common costs would substantially reinstate turnover as the basis for the allocation of common costs in general. This would not be acceptable where there is no operational reason for fixed-to-mobile calls to give rise to greater retail costs than do other types of calls activity.

2.108. We explored the possibility of using a value-added criterion calculated as turnover net of outpayments. BT had reservations about this as any reallocation of retail costs altered the values by reference to which the attributions were being made. This in turn led to still further changes in retail cost allocation. We do not regard this as a fatal objection. It is in principle possible to identify an allocation of costs which is consistent with the value added to which it gives rise. However, our underlying concern is to identify the proportion of these costs that it is appropriate to allocate to BT's calls to mobile activity given that there is no good reason to differentiate that activity from the retailing of other call types. In our view, allocation by value added, which requires an estimate of potentially erratic profit levels, is not the only, or necessarily the most straightforward, basis for achieving that objective. An allocation on the basis of call minutes would involve pooling the relevant group of costs for all call types (including international calls) and dividing by all outgoing call minutes. In practice, allocation on this basis and on the basis of value added give relatively similar results for fixed-to-mobile calls (see paragraph 5.39).

2.109. As shown in Table 2.3, the result of our review of retail costs is a revised 1997/98 allocation to fixed-to-mobile calls of 1.40 ppm, which compares with 3.29 ppm in BT's published accounting separation statements.

TABLE 2.3 **BT: comparison of retail costs, 1997/98, MMC allocation basis**

	MMC allocation		*Accounting separation**	
	£m	*ppm†*	*£m*	*ppm†*
Turnover-related:‡				
Bad debts Debt collection Post Office commission	*Figures omitted. See note on page iv.*			
	13.6	0.48	14.9	0.52
Call number-related:				
Computing Planning and development Billing Customer service Other finances and billing Depreciation (part)	*Figures omitted. See note on page iv.*			
	14.6	0.51	29.4	1.03
Profit-related:				
Interest received	(0.8)	(0.3)	(0.08)	(0.03)
Call minute-related:				
General management Personnel and administration Redundancy Publicity Other marketing Field sales force Post Office handling Depreciation (part) Other retail costs	*Figures omitted. See note on page iv.*			
	12.6	0.44	50.4	1.77
Total	40.0	1.40	93.9	3.29

Source: BT and MMC.

*Retail costs in the table are grouped according to the MMC allocation basis. However, these bases do not necessarily correspond with those used in the original accounting separation analysis of retail costs.
†Figures in ppm include the effect of rounding.
‡Turnover-related items have been recalculated to reflect the lower turnover resulting from the allocation of retail costs made by the MMC.

The 'access deficit'

2.110. The other costing matter raised by BT was the inclusion within the level of retail prices of implied compensation for the deficit, which BT continues to incur, in its access business. BT Access provides the local loop giving connection from the customer's premises to the local exchange. The costs and net assets involved are considerable and although BT Access receives line rentals and connection charges these are insufficient for it both to cover its operating costs and to make a reasonable return on the assets employed. Until February 1996 BT Retail and other operators made access deficit contributions (ADCs) to BT Access to cover the deficit, but these have now been discontinued. The access deficit arrangements involved operators (including BT Retail) which used BT's network paying ADCs to BT Access; the ADCs were set at a level such that, after including the ADCs received in its accounts, BT Access made a normal return on its capital employed. The DGT was able to waive ADCs for some operators in the interests of encouraging market entry, and in practice the bulk of the ADCs came from BT Retail. These transfer charges between BT Access and BT Retail ceased in February 1996. BT told us that part of its return on all types of call represented continuation of the need to recover the access deficit from call charges.

2.111. BT calculated that in 1997/98 the deficit in HCA terms was 0.73 ppm and that in current cost accounting (CCA) terms it was 1.04 ppm. We recognize the need to recover the access deficit, but an equal spread across all call minutes is not the only way the recovery could be made. In contrast to most inland calls which both originate and terminate on BT's network and so use the local loop at both ends of the call, fixed-to-mobile calls terminate on a mobile network and so only use the local loop at the originating end. Recognition of this feature might lead to a recovery of the access deficit involving weighting of calls according to the extent of the use made of local loop facilities, with each inland call being allocated roughly twice the deficit allocated to a fixed-to-mobile call. However, it is a widely-used convention in telephony that the caller meets the full cost of any call. On this basis each type of outbound call counts equally. For this reason we accept that there should be broadly similar recovery of the access deficit by reference to call volume. Further we consider that we should have regard to the access deficit in CCA terms, for consistency with the LRIC-based network charges which in practice are roughly comparable to CCA costs.

BT's return

2.112. It remains to consider what level of return it would be reasonable for BT Retail to make in its calls to mobile activity. The activities of BT Retail are relatively limited in that the main value it adds lies in marketing, customer service, billing and other activities included in retail costs. Over 80 per cent of the retail price to customers represents the cost of bought-in services where the price paid by BT Retail to the supplier (whether the MNOs, BT Network or BT Access) includes full recovery of their costs and a return on the net assets employed in the business.

2.113. In normal circumstances we would look to identify a reasonable level of profit by having regard to the need to earn an adequate return on the net assets employed in the calls to mobile activity of BT Retail. In practice, the mean net assets employed in all the call activities are not only relatively small, but they consist for the most part of working capital items which can fluctuate considerably from year to year. In 1997/98, for instance, the return on mean net assets in the accounting separation statements for the calls to mobile activity was 455 per cent and on other types of call it ranged from 58 per cent on international calls to 333 per cent on local calls. It appears to us that in such circumstances capital employed is not a reliable basis for setting a reasonable return.

2.114. We looked for appropriate comparators and put to BT the procedure we had used in our inquiry in 1995 into the regulated supply business of Scottish Hydro-Electric.[1] In that case the supply business bought in generation, transmission and distribution services from other parts of the group and performed marketing, customer service and billing functions comparable with those undertaken by BT Retail. The return we recommended in the supply business broadly equated to 0.5 per cent on turnover and the approach we adopted was later followed by the Directors General of Electricity Supply and Gas Supply in the course of reviews of supply business prices. The rate of return allowed in these cases was 1.5 per cent, in recognition of the increased risks which applied in the businesses as competition continued to develop.

2.115. In response BT claimed that its accounting separation return on fixed-to-mobile calls as a percentage of turnover was below that on other types of call and so could not be regarded as excessive. If outside comparators were sought BT considered that returns in non-regulated sectors were more relevant, given the importance of preserving incentives for competition. BT supplied details of returns on turnover in five service sectors ranging from stores to oil and gas with an average return of just under 10 per cent. Alternatively, BT

[1] *Scottish Hydro-Electric plc: a report on a reference under section 12 of the Electricity Act 1989*, HMSO, June 1995.

suggested that a more appropriate application of the gas and electricity position was to calculate a return at 1.5 per cent of the Scottish Hydro-Electric turnover and then to express it as a return on the retail costs involved, a figure of some 25 per cent. BT said that this percentage was broadly in line with its return on turnover less network costs of 29.9 per cent (Table 2.1), which BT said represented its value added. However, we note that the accounting separation return of 1.74 ppm represents 52.9 per cent of the retail costs of the calls to mobile activity of 3.29 ppm.

2.116. We consider that direct comparison with the non-regulated sector is not appropriate as such returns are for businesses which in some cases involve substantial capital employed and represent the return for the full range of activities undertaken by the company, rather than that of a single division providing the interface with customers. Moreover, such comparisons are sensitive to the industry selected.[1] We also recognize that the circumstances of Scottish Hydro-Electric are not identical with BT's calls to mobiles activity. But there are some similarities, not least the very high proportion of turnover accounted for by bought-in services, and we believe that some reference to the return applied to Scottish Hydro-Electric and to the slightly higher return since applied to gas and electricity supply is valid.

2.117. There is no parallel in the retailing of fixed-to-mobile calls with the risk of exposure to energy price fluctuations which arguably applies to gas and electricity supply. But the risk to BT from potential competitors is clearly at least as great as that applying in energy supply. Although we have argued that BT's calls to mobile activity is not yet subject to sufficient competition to constrain its charges, the potential for competition from new operators (see paragraph 2.82) and the speed with which it could impact on BT are factors which we believe differentiate BT's calls to mobile activity from the circumstances of Scottish Hydro-Electric. We also acknowledge that the value added by BT's calls to mobile activity is somewhat greater than is the case for Scottish Hydro-Electric. Taking these factors into account we consider that a return on turnover of 1.5 per cent would be appropriate for BT's calls-to-mobile activity. This would be in the order of 23 per cent of the 1997/98 retail costs that we consider to be attributable to that activity.

2.118. BT viewed such a figure as too low and said that we would be seen to be setting an entirely inappropriate benchmark for other parts of its business. We do not agree that that would be the implication of our finding. As we have made clear in paragraphs 2.114 to 116, having concluded that it would be necessary to consider BT's return by reference to its turnover rather than its assets, a key consideration in our analysis is the extent to which the turnover of the calls to mobile activity is accounted for by bought-in services. It is quite possible that other businesses, including, conceivably, other businesses within BT, will replicate those circumstances. But that is not inevitable. For example, in the case of the local, national and international call activities of BT Retail, the relationship between outpayments to BT Network or other operators and the total turnover of the activity is entirely different from the equivalent relationship in the calls to mobile activity. We do not therefore consider that our finding on the level of return that is appropriate for the calls to mobile activity necessarily has any application to other parts of BT Retail. Nor do we believe that it could reasonably be construed in that way.

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[1]In another previous MMC report, the returns on turnover in pharmaceutical wholesaling and retailing were found to be between 1 and 2 per cent. See *Unichem PLC/Macarthy PLC and Lloyds Chemists PLC/Macarthy PLC: a report on the proposed mergers*, Cm 1845, HMSO, February 1992.

Conclusion on BT's retail charge for 1997/98

2.119. We have considered the various components of BT's retail charge by reference to BT's actual costs. In the absence of sufficient competition to constrain prices, it is also relevant to consider whether those costs are efficiently incurred. One approach to this issue is to identify a comparator or series of comparators carrying on the same business in similar circumstances. However, the differences between BT and its competitors in terms of maturity, market share and volume of traffic carried are such that we would expect any relative inefficiency in BT's operation to be masked by its economies of scale. Given the extent of the common costs relevant to BT's handling of fixed-to-mobile calls, the alternative approach of a bottom-up assessment of BT's costs would necessarily require a review across a much wider area of BT's retail and network businesses than is covered by our relatively narrow terms of reference. However, we are satisfied that, in view of its scale and history of price regulation, BT is likely to be a relatively low-cost operator, and that it is not therefore necessary to conduct a full investigation of BT's efficiency for the purposes of our public interest judgment.

2.120. In drawing conclusions from our assessment we must allow for the fact that BT's retail charge is substantially influenced by the level of its POLOs. As we note in paragraph 2.86, we do not consider it to be against the public interest for BT to pass these payments on to its customers. We therefore focus particularly on the remaining elements of BT's charge (before VAT but after allowing for discounts) which collectively we regard as BT's retention and we set out in Table 2.4 BT's actual retail charge and retention in 1997/98 and the retail charge and retention that would have applied on the basis of what we believe to be an appropriate allocation of BT's 1997/98 costs and a reasonable rate of return.

TABLE 2.4 **BT's retention and retail charge in 1997/98: the accounting separation and MMC assessments**

		ppm
	BT's accounting separation	*MMC assessment*
Own network charges	0.77	0.77
Call set-up adjustment	N/A	0.29
Retail costs	3.29	1.40
ADC	N/A	1.04
Return	1.74	0.32
Retention	5.80	3.82
POLO	17.22	17.22
Retail charge	23.02	21.04

Source: BT and MMC.

2.121. On the basis of these figures, BT's retention on its calls to mobile activity, and thus on its calls to the Cellnet and Vodafone networks, appears to have been 52 per cent above the level that would result from an appropriate allocation of costs and the application of a level of return that we consider appropriate for this kind of business. However, there are two further matters that we must consider before deciding whether BT's charges for calls to the Cellnet and Vodafone networks are operating against the public interest or might be expected to do so in future. The first is the level of costs that BT is likely to incur in its calls to mobile activity in the current financial year, 1998/99, and in the immediate future. The second is whether BT's ability to charge retail rates above the levels arising from our assessment in Table 2.4 and our forecast of the future movement in its costs might have benefits to the public interest that we should balance against any detriments. We consider first the likely movement in BT's costs and its implications for BT's retention and revenue.

BT's current and future costs and retention

2.122. In our analysis of the state of competition for BT's calls to mobile activity, we conclude that competition alone would not be sufficient to constrain BT's charges at least for three or four years but that it may be sufficient thereafter. It is therefore possible that after the beginning of 2002, competitive constraints on BT's charges for fixed-to-mobile calls will ensure an efficient allocation of costs to its calls to mobile activity and will constrain its profits to reasonable levels. Given that possibility, it is not in our view necessary for us to forecast BT's costs or to calculate how those costs would be allocated on the basis underlying our assessment in Table 2.4 beyond the year 2001/02.

2.123. While improved efficiency might be expected to reduce BT's costs over time, the most important driver of its costs per call minute is the volume of fixed-to-mobile calls. As this is growing very rapidly (see paragraph 2.34) any one forecast is likely to be subject to a significant margin of error. We have therefore based our own projection on a range of other forecasts made by industry analysts and by the MNOs and our assumptions are described in paragraph 5.55.

2.124. To estimate the effects of improved efficiency and other matters on BT's costs we have made separate assumptions for each item making up its retention and these assumptions and the reasons underlying them are set out in paragraphs 5.52 to 5.60.

2.125. A further consideration is the effect, if any, on BT's costs of a change of charging practice in relation to calls to the Cellnet and Vodafone networks that are unanswered or diverted. In our separate reports on Cellnet's and Vodafone's termination charges we conclude that it is against the public interest for charges to be made for unanswered calls terminated on a recorded announcement, or for unanswered calls which are diverted from the announcement of the diversion. We propose that their costs should be recovered in charges for successful calls. BT told us that it would not make a retail charge for unsuccessful or diverted calls provided that those calls were no longer signalled by Cellnet or Vodafone as successful calls. However, if BT were also to recover the costs of those calls from successful callers, the overall effect would be that it had to recover its costs from a lower call volume and we would need to consider whether its retention should be correspondingly higher. BT itself submitted that its revenues from retentions on fixed-to-mobile calls should be maintained at the level that would have applied had the present charging practice continued.

2.126. We are aware that on fixed networks no charges are made for unsuccessful calls, the costs of these calls already being spread and recovered from successful calls. Cellnet's and Vodafone's practice is therefore being brought into line with that applying to the much greater volume of calls using only the fixed network. An alternative view to that expressed by BT is that it would be anomalous to accord special treatment to fixed-to-mobile calls by continuing to treat them differently from the generality of calls. In projecting future costs of fixed-to-mobile calls (see paragraphs 5.55 to 5.58) we have worked on the basis that these calls are part of an integrated network operation and we have recalculated the respective proportions of retail costs and the access deficit each year in the light of expected volumes of traffic, rather than 'ring fencing' the costs of the calls to mobile activity and projecting them separately from the rest of the network. This results in, for instance, a higher ADC for fixed-to-mobile calls, a higher allocation of retail costs and hence a higher retention for BT. In the same way, we do not consider it appropriate to ring-fence BT's costs for unanswered calls to Cellnet and Vodafone subscribers. In common with the practice on other unsuccessful calls, these costs should be spread across all calls. On the basis of the cost allocation methodology and our assessment of BT's retention this would have a negligible effect on the costs allocated to the calls to mobiles activity.

2.127. A forecast of BT's appropriately allocated costs and its return also requires us to make assumptions about the level of POLOs that BT will be required to pay. In line with our terms of reference, our concern is specifically with BT's charges for calls to the Cellnet and Vodafone networks and it is therefore the termination charges of those operators that we must predict. In our reports on Cellnet's and Vodafone's termination charges we identify levels above which those charges may be expected to operate against the public interest and we propose that Cellnet's and Vodafone's charges should be limited to 11.70 ppm in 1999/2000 and to levels adjusted by an RPI–9 formula in each of the following two years. We expect those proposals to be adopted and accordingly expect BT to pay charges to Cellnet and Vodafone at that level.

2.128. On the basis of these methodologies and assumptions, we forecast that BT's appropriately allocated costs together with an allowance for a reasonable rate of return would produce levels of retention and levels of retail charge as indicated in Table 2.5, between 1997/98 and 2001/02.

TABLE 2.5 **BT: levels of retention based on the MMC's assessment**

ppm

	1997/98	*1998/99*	*1999/2000*	*2000/01*	*2001/02*
BT network charges	0.77	0.73	0.69	0.66	0.63
Call set-up adjustment	0.29	0.27	0.24	0.22	0.19
Retail costs	1.40	1.37	1.27	1.24	1.21
ADC	1.04	1.00	0.97	0.93	0.90
Return	0.32	0.28	0.23	0.21	0.20
BT's retention	3.82	3.65	3.40	3.26	3.13
POLO	17.22	15.22†	11.70	11.00	10.34
Revenue*	21.04	18.87	15.10	14.26	13.47

Source: MMC.

*Revenue is net of discounts.

†The projected average for the whole year. The weighted average charge from August 1998 was 14.83 ppm.

2.129. As noted in paragraph 2.121, BT's retention in 1997/98 on fixed-to-mobile calls, including calls to the Cellnet and Vodafone networks, was some 52 per cent above the retention we consider necessary to recover properly allocated costs and a reasonable rate of return. We estimate BT's current weighted average retail charge to be in the order of 20.5 ppm (see paragraph 5.59). Allowing for the current (ie from 1 August 1998) average termination rate of 14.83 ppm paid to Cellnet and Vodafone, this implies a retention of 5.67 ppm, which is slightly below BT's 1997/98 retention but still some 55 per cent above our benchmark retention for 1998/99 of 3.65 ppm. Even if the methodology slightly overstates BT's current retention, the difference between that retention and the figure resulting from our assessment is likely to be substantial and we have no reason to believe that the levels of BT's retail charges or retention for calls to the Cellnet and Vodafone networks will fall into line with the levels indicated in Table 2.5 before March 2002.

Conclusions on the public interest

2.130. We have now to consider the implications of our findings on BT's charges and retention on calls to the Cellnet and Vodafone networks for the public interest, in the light of the various matters to which the 1984 Act requires us to have regard, including the matters referred to in section 3 of the Act (see paragraph 2.29 and Appendix 3.1).

2.131. In the light of our assessment (paragraph 2.82) that there is insufficient competitive pressure on BT's charges for fixed-to-mobile calls to ensure that they are properly restrained and that this situation may be expected to continue until 2002, we consider that the interest of consumers, purchasers and other users of telecommunications services would not be promoted if BT's retail charges were more than was necessary to recover appropriately allocated costs and a rate of return appropriate to the calls to mobile retail activity. As noted in paragraph 2.129, we consider that BT's retention is above this level and that this is likely to be the situation until March 2002.

2.132. However, in accordance with section 3(1) of the 1984 Act we have considered whether any change in BT's retention to remove the excess would adversely affect the company's ability to finance its business. On the assumption that BT would apply any reduction in its retention on calls to the Cellnet and Vodafone networks in a non-discriminatory way, to all relevant MNOs, a reduction in its retention in 1997/98 to the level envisaged in our assessment (see Table 2.4) would have reduced its revenues by approximately £56 million in a full year. Assuming that no action was taken by BT's management to mitigate or offset the loss of revenue, the reduction would have amounted to between 2 and 3 per cent of the total profits of BT's retail business. Given that BT's borrowings are also currently very low, there is, in our view, no question of reductions in BT's retention to the levels indicated in Table 2.5 limiting BT's ability to finance the activities it is licensed to carry on.

2.133. We have also considered concerns expressed by BT that a restriction on BT's retention would inhibit entry to the market to the longer-term detriment of competition. Though a restriction of BT's margin would clearly be relevant to the decision of potential new entrants, we do not believe that a reduction to the levels indicated in Table 2.5 would have an adverse impact on the rate of entry. Given the potential for growth in fixed-to-mobile calls and the scope for volume to be won from BT, we believe that a return of 1.5 per cent on overall turnover would give other operators an adequate margin within which to compete. Moreover, our assessment of BT's retention provides for a further substantial margin, currently some 5.3 per cent of turnover, to allow BT to recover its access deficit. Although some operators, such as the cable companies, will need to recover their investments in infrastructure, it seems unlikely that, with costs spread over entertainment as well as telecommunications services, these costs would approach the scale of BT's access deficit. Moreover, indirect access operators would have no similar cost commitments. We are therefore satisfied that BT's overall margin would leave ample room for price competition from other operators.

2.134. Taking all these factors into account, we conclude that BT's retail charges for calls to the Cellnet and Vodafone networks operate against the public interest and may be expected to operate against the public interest until March 2002. The particular effects adverse to the public interest that those charges have and may be expected to have are that BT's retention (and thus retail charges) for such calls are higher, and are likely to be higher, than the level required to enable BT to recover its efficiently incurred costs and a reasonable rate of return and to finance its licensed activity, contrary to the interests of callers as regards prices. That level for each year is the sum referred to in Table 2.5 as 'BT's retention'.

Licence modifications

2.135. We are now required by our terms of reference to report on whether these adverse effects could be remedied by modifications to the conditions of BT's licence.

2.136. In the DGT's view, the adverse effects he considered to arise from the level of BT's retention were capable of being remedied by licence modifications. Such modifications should provide that:

(a) BT's charges on fixed-to-mobile calls be reduced to such level as would secure a retention which was no more than reasonable (being less than 3.39 ppm, later modified by the DGT in the light of publication of the 1997/98 accounting separation statements to between 2.6 and 2.7 ppm);

(b) the allowable retention should be no greater than the retention on inland calls; and

(c) BT should not raise any charge for calls to Cellnet's and Vodafone's networks in respect of unanswered calls nor for diverted calls before they were answered.

2.137. We put to BT, on a hypothetical basis, the following possible licence modifications:

(a) a modification requiring BT's retail charges for fixed-to-mobile calls to be no higher than levels prescribed in the licence in the form of an initial specified level, adjusted annually according to an RPI–X formula;

(b) a modification requiring BT's average retention on fixed-to-mobile calls to be no higher than its average retention on national and local calls taken together;

(c) a modification requiring BT's average retention on fixed-to-mobile calls to be no higher than its average retention on local and national calls, taken together, adjusted by a factor reflecting any objectively justifiable differences in the costs of these two categories of activity; and

(d) a modification requiring BT not to charge for fixed-to-mobile calls where MNOs made no termination charge for such calls.

2.138. In response, BT said that it believed the current retail prices did not act against the public interest and therefore that a remedy was not necessary. If, however, additional ongoing control were required as a safeguard, the inclusion of fixed-to-mobile calls in the basket of services for the existing RPI–X control would be simple, consistent and would avoid the main risks associated with a 'narrow' price control.

2.139. BT told us that the simple principles of the Better Regulation Task Force—including consistency, proportionality and narrow targeting—bore pertinently on any hypothetical remedy. In the light of these BT considered that any remedy should:

(a) not inhibit the further development of competition;

(b) use existing instruments where possible;

(c) apply costings and cost allocations consistently; and

(d) be confined to areas of the market where protection is demonstrably required.

2.140. BT believed its proposal for the inclusion of fixed-to-mobile calls within the existing retail price control would be in line with the principles of good regulation. Moreover any ongoing control should be for a defined and limited time only, reflecting the pace of development of competition.

2.141. BT drew our attention to what it considered to be a number of drawbacks to the possible remedies we had put to the company. First, an initial specified level for retail charges, adjusted thereafter according to an RPI–X formula, would, if too severe, stifle the development of competition and be inconsistent with the level of returns which BT considered appropriate and acceptable. Second, a proposal for an RPI–X formula specific to fixed-to-mobile calls would cover a broader group of users than the control on other types of call, would be more difficult to forecast than a basket of services (where variances in individual forecasts were likely to offset each other) and would result in loss of flexibility in achieving communicable price points as annual price reductions of a fraction of a penny would be required. Such points led to BT's proposal that, if remedies were considered necessary, then fixed-to-mobile calls should be included in the basket for the existing retail price control. Inclusion of fixed-to-mobile calls within this price control would be simple, be consistent with the treatment of other types of call and avoid any problems over forecasting and pricing.

2.142. However, BT noted that a cap on retail charges would be insufficient without equivalent regulation of the MNOs' termination charges since the POLO accounted for three-quarters of retail revenue in 1997/98. BT said that it had successfully negotiated lower termination rates with the MNOs in the past as it was in the interest of the MNOs to see retail prices reduced. If retail prices were already set by regulation, there would be no incentive on MNOs to agree lower termination rates and BT would then be exposed to financial risk if it failed to secure reductions in termination rates to match required reductions in retail charges.

2.143. BT told us that there was no rational basis for a remedy linking the retention on fixed-to-mobile calls with that on inland calls and that it would completely disregard the detailed accounting methodology which BT had agreed with the DGT and was used as the basis for other regulatory decisions.

2.144. BT considered that a licence modification to deal with unanswered and diverted calls was unnecessary and disproportionate to the hypothetical public interest detriment being addressed. Only simple technical changes would be required for Vodafone and Cellnet to send a signal to BT in relation to calls resulting in recorded announcements that the calls were not subject to a charge. This would bring the procedure into line with that which already applied to calls from BT to the networks of Orange and One2One. In the unlikely event that BT continued to charge for unanswered calls to the Vodafone or Cellnet networks, while not charging customers calling the Orange or One2One networks, the DGT would have the power under BT's licence to deem this undue discrimination and to take action against BT to remedy the breach.

2.145. In considering whether the adverse effects identified in paragraph 2.134 could be remedied or prevented by modification of BT's licence, we look first at a licence modification requiring BT to put in place measures to improve customer awareness and the communication to them of information on prices. BT explained that it had already put in place measures to improve customer awareness and was continuing to explore how awareness could be raised further. As we show in paragraphs 4.176 to 4.187, customers have limited knowledge of charges for fixed-to-mobile calls. No doubt more might be done in this area and the DGT told us that he would wish to discuss further with BT the presentation of information on fixed-to-mobile calls on its bills. But even much improved customer awareness would not in our view adequately address the point that there is currently insufficient competition on fixed-to-mobile calls to constrain BT's prices. If BT's retention is excessive, as we believe it is, then any effect that improved customer information may have on the development of competition would be too slow and too indirect to remedy the adverse effects we have found.

2.146. The DGT's proposal that BT's retention on fixed-to-mobile calls should be linked to its retention on inland calls was based on the premise that the two sets of activity should have an identical retention. In practice, we consider that there are good reasons for BT's retention on fixed-to-mobile calls to differ in certain respects from its retention on inland calls. It would be possible to establish a relationship between the levels of retention on the two types of call but we are not convinced that the cost allocation principles that we have accepted in relation to fixed-to-mobile calls would necessarily result in that relationship being maintained over the next few years. Moreover, as the DGT has recognized, the traffic profiles of fixed-to-mobile calls and inland calls may differ. BT should be free to set its rates so as to respond to these differences and this may have implications for the weightings used to calculate average charges for the different types of call. In the circumstances, we consider that a licence modification linking the retentions on fixed-to-mobile calls to the Cellnet and Vodafone networks and inland calls would not be appropriate and we do not recommend it.

2.147. As to the argument that any control on charges should be accomplished by the inclusion of fixed-to-mobile calls within the basket of the existing retail price control, we note the strength of BT's view on this matter. The process suggested by BT was one which would achieve an effect similar to that which would have resulted from fixed-to-mobile calls being included in the retail price control from the outset in 1997. Any initial reduction required in the case of fixed-to-mobile calls would be treated as a price reduction for the purposes of the retail price control, so that at least some of the reduction could be recouped by BT as a 'credit', allowing higher charges for other services. This would simulate what would have occurred if fixed-to-mobile calls had been included in the retail RPI–X formula and BT had cut charges for these calls by the full extent of any initial reduction now required.

2.148. Although the basket reflects the bottom 80 per cent of bills, by value, of residential customers and such customers currently make only 14 per cent of fixed-to-mobile calls, the basket prices apply to the remaining 20 per cent of residential customers and to small business customers, so the effect of reductions in fixed-to-mobile calls charges would spread more generally. In order to address the possibility that the benefits of an initial price reduction on fixed-to-mobile call charges would be subsequently reversed by offsetting movements within the basket, BT suggested a separate sub-cap in the form of RPI–RPI. This would ensure that nominal charges for fixed-to-mobile calls were not increased and would safeguard BT's commitment to pass through reductions in the termination rates charged by MNOs.

2.149. We have considered carefully the case made by BT against a separate charge control for fixed-to-mobile calls. Certainly it has the advantage of simplicity (although we shall disregard for the purposes of the rest of our analysis the added complication that our findings and proposals relate only to the Cellnet and Vodafone networks) and it draws upon existing regulatory procedures. However, even with the addition of a separate sub-cap for fixed-to-mobile call charges, we are not persuaded that it would adequately remove or prevent the public interest detriment, which is specific to fixed-to-mobile calls. Inclusion in the basket would require BT to reduce prices each year by an additional amount representing the fixed-to-mobile call weighting in the basket, multiplied by the RPI–X factor. But there is no certainty that the required price reduction will be made in fixed-to-mobile call charges. It would be open to BT to maintain charges for fixed-to-mobile calls (subject only to the restraint of the sub-cap) and to reduce charges for other services to compensate. Indeed it could be to the advantage of the company to target reductions in charges on services that fall mainly within the basket, because a higher proportion of the revenue forgone could then be credited towards meeting the retail price controls. Were this to occur we would consider that the excessive retention on fixed-to-mobile calls had not been prevented. In any case the scale of the reduction in the levels of retention referred to in Table 2.5 is greater by some 2.5 percentage points a year in the period from 1999/2000 to 2001/02 than the reduction implied by the formula RPI–4.5 per cent that currently applies to calls regulated within the basket. In addition, there would be no mechanism to provide that reductions in termination charges were actually reflected in charges for fixed-to-mobile calls. A change in the MNO termination rate would not affect BT's price reduction obligations under the retail RPI–X formula. We consider that achievement of the necessary reductions in fixed-to-mobile call charges beyond the initial reduction proposed for 1999/2000 would be uncertain. We therefore reject the proposal for the inclusion of fixed-to-mobile calls in the retail price control arrangements. We recognize that this raises questions about the recovery of costs that could not be recovered within a separate price control on fixed-to-mobile calls and we return to this issue in paragraph 2.159.

2.150. We are persuaded by BT's argument that a control over retail charges, without explicit provision for the way that the POLO is treated, is inappropriate. The most direct approach to remedying the adverse effects we have identified is the regulation of BT's retention, for the period up to March 2002, with the retention being identified as the retail charge less the POLO. We now consider how this should be done and in particular whether there should be a control on BT's average retention or on its retention on individual charges.

2.151. We start from the premise that in the case of both BT's retail charges and the termination charges of Cellnet and Vodafone, which are the subject of our separate reports, there is a possibility that sufficient competition will develop in due course to constrain the charges concerned and protect consumers. We would not therefore wish any licence modification we propose in relation to BT's retention to hinder the development of competition for BT or to hinder or mask the development of competition between the MNOs on termination charges. We therefore consider that BT's retention for calls to the Cellnet and Vodafone networks should be controlled in such a way as to allow for price differentials between Cellnet and Vodafone to be reflected in retail charges.

2.152. We recognize that, for operational or commercial reasons, BT will wish to have some flexibility to establish its own profile of charges for individual periods of the day or week, and for this purpose will need a degree of flexibility in the application of its retention. We therefore propose that the control should apply to the weighted average of BT's retention, with the weightings determined each year according to the profile of fixed-to-mobile calls handled by BT in the latest year for which figures are available.

2.153. However, we consider it important that this flexibility should not be used, intentionally or otherwise, to set retail charges that mask differences in termination rates charged by Cellnet and Vodafone. BT told us that it did not necessarily reflect insignificant changes or differences in termination charges in its retail charges. That is an understandable position but discretion for BT in this respect could conceivably impede price competition between the mobile networks unless subject to some control. We therefore propose that there should be a requirement on BT to apply the same level of retention in any one charging period to calls to the Cellnet and Vodafone networks. This means that, if Cellnet or Vodafone either introduce an overall reduction in their rates or adopt different tariff profiles, this will be reflected in different retail charges for calls to the two MNOs. But, at the same time, BT would be able to balance the application of its retention between different charging periods and would therefore have some control over the profile of its retail charges.

2.154. If this principle were applied strictly, it would mean that BT's charges should also reflect any differences between Cellnet's and Vodafone's charges arising from the adoption of different definitions for particular charging periods. This is not an issue at present because the charging periods used by Cellnet, Vodafone and BT are currently in line. However, we recognize that a minor change in the definition of a charging period by one or other MNO could complicate BT's charging structure to a degree that would outweigh the benefits of the change to consumers. This would not necessarily be the case; we can envisage circumstances where a change in the definition of a charging period could have genuine competitive effect. But these are circumstances for which it is very difficult to formulate firm rules and we therefore believe that it will need to be within the discretion of the DGT to relax the equal retention principle where the termination charges of Cellnet and Vodafone differ at any given time by reason of their adoption of different charging periods.

2.155. One other proviso that we believe should apply to the equal retention principle is that, in recognition of the value to consumers of BT being able to set simple and communicable prices for its customers, it should always be possible for BT to round its retail charge up or down to the nearest 0.1 ppm.

2.156. Subject to these additional requirements, we consider that there should be a separate control on BT's weighted average retention on fixed-to-mobile calls to the Cellnet and Vodafone networks. The control should take the form of a ceiling on BT's weighted average retention for 1999/2000 and a provision for that ceiling to be adjusted in 2000/2001 and 2001/2002 by an RPI–X formula. The ceiling for 1999/2000 should be set at a level of 3.40 ppm and that should be adjusted in each of the following two years by RPI–7 per cent which is approximately equal to our expectation of the fall in BT's retention if it were to reflect appropriately allocated costs and a reasonable rate of return (see Table 2.5). The weightings used in setting the ceiling should reflect the profile of BT's fixed-to-mobile call traffic in the latest 12-month period for which figures are available. In order to ensure full compliance with the price control, we believe that there should also be a requirement that over-recovery through charges that exceed the proposed ceilings should be made good by BT in the following year.

2.157. We also need to consider the treatment of discounts which BT offers to customers. Our retention and revenue calculations for 1997/98 and subsequent years (Table 2.5) apply to revenue net of discounts. If an RPI–X price control is introduced it is important to ensure that the effect on charges is not eroded by variations in BT's discounts. A similar position applies in the existing retail price control and is dealt with by Condition 24C of BT's licence, the effect of which is to freeze aggregate discounts at the level applying in the year to 31 July 1996 (the year preceding commencement of the current price control). The procedure used is that for each year BT estimates the numbers of its residential customers receiving discounts which it has offered in that year. On the basis of that estimate BT calculates on a weighted average basis the revenue it would have forgone in the previous financial year on the assumption that the discounts had been offered to the customers in that year. The aggregate of these revenues forgone is the discount yield for the year. The discount yield for the year is compared with the 'score' which is the percentage discount yield for the year to 31 July 1996. If in any year the percentage discount yield is below the score, the difference is either deducted from the controlling percentage in the RPI–X formula or added to the score, or partly the one and partly the other. We consider that a similar process should be incorporated in BT's licence for fixed-to-mobile calls with the score calculations being made by reference to discounts in the year to 31 March 1998.

2.158. As indicated in paragraph 2.125 above, we have concluded in our reports on Cellnet's and Vodafone's termination charges that their charges for calls answered by a recorded announcement and their practice of charging for diverted calls from the point at which the diversion is announced are contrary to the public interest. We have found that the adverse effects may be remedied by licence modifications preventing charges being made for such calls. BT told us that provided that Cellnet and Vodafone ensured that the signal sent to

BT in such circumstances was changed, it would not make a retail charge for the calls concerned. Both BT and the DGT considered that BT's licence would already constrain BT from making a charge to callers in such circumstances and we see no need for a licence modification.

2.159. We recognize that our proposal for a separate price control for fixed-to-mobile calls would have the effect of preventing BT from recovering in its charges for calls to the Cellnet and Vodafone networks, certain costs that are currently included in its retention on fixed-to-mobile calls. It is clear that a major concern underlying BT's wish to have the control of fixed-to-mobile call charges integrated with the existing price control was that it should be able to recover these costs elsewhere (see paragraph 5.62). However, our assessment of BT's retention also allows the recovery in fixed-to-mobile call charges of costs that are currently recovered by other activities subject to a price control. In particular, the recovery of additional call set-up costs in charges for fixed-to-mobile calls should reduce the costs incurred by BT's other call retailing activities. The rapid growth in the volume of fixed-to-mobile calls is also likely to have the effect of attracting a progressively higher proportion of BT's access deficit into the calls to mobile activity. We have considered it appropriate for that to happen but it is likely to have implications for the costs of other activities.

2.160. There are therefore a number of wider cost recovery issues arising from our assessment of the narrow matter referred to us. We have not sought to prescribe the cost allocation methodologies to be used by BT across its various businesses. This is a matter that BT will no doubt wish to address, in consultation as necessary with the DGT, taking into account the concerns that have led to our reassessment of its costs. Whether there is a need for existing price controls to be relaxed to allow BT to recover costs displaced from the calls to mobile activity is a question that can only be resolved after full consideration not only of the net effects of our proposals on BT's costs, but also of the detailed assumptions underlying existing price controls on other types of calls. These are matters which, in our view, can only be resolved by discussion between the DGT and BT. Given the potential for the DGT to modify existing price controls if necessary, there is no basis for an expectation on our part that our proposals would lead to circumstances in which the interests of consumers or BT's ability to finance its licensed activities would be damaged.

2.161. We conclude therefore that the adverse effects specified in paragraph 2.134 can be remedied by a modification to the conditions of BT's licence. The modifications by which the adverse effects may be remedied or prevented are modifications:

(a) to require the average of the individual rates of retention for calls to subscribers on the Cellnet network, when weighted according to BT's traffic profiles in the latest 12-month period for which figures are available, not to exceed:

 (i) in the year to March 2000, 3.40 ppm;

 (ii) in the year to March 2001, that amount adjusted by RPI–7; and

 (iii) in the year to March 2002, the amount applicable for the previous year adjusted by RPI–7;

(b) to provide for any over-recovery through charges that exceed these levels to be made good in the following year;

(c) to provide a mechanism, as described in paragraph 2.157, to ensure that the control in sub-paragraph *(a)* is not eroded by variations in BT's discounts;

(d) to require BT's retention on calls to the Vodafone network to be subject to an identical control to that envisaged in *(a)* to *(c)*; and

(e) to require BT not, in any given charging period, to apply different retentions for calls to Cellnet's and Vodafone's networks, except:

(i) to the extent necessary to allow BT to round its retail charge for calls to an individual network up or down to the nearest 0.1 ppm; and

(ii) as permitted by the DGT, where Cellnet or Vodafone has adopted a different charging period from BT.