

5 The costs of fixed-to-mobile calls

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Introduction

5.1. This chapter starts by describing the costs involved in the provision by a PTO of fixed-to-mobile telephony services, and how the costs are currently dealt with by BT. A summary is then provided of the financial results of the call activities of the BT Retail Systems business. Next, the methods in use by BT to allocate the retail costs of the BT Retail Systems business between its constituent activities are described, together with possible alternative allocations of retail costs to the calls to mobile activity which BT put to us. Other costing matters affecting calls to mobile, including how the costs would be affected if the charges for use of BT's network included a call set-up element, are then

considered and this is followed by an indication, on an illustrative basis, of the revenue, retention, and return of BT if an alternative method of reflecting cost were in place. A possible projection of the effect of applying this alternative method over the period to March 2002 is then summarized. Finally an indication is given of the consequential effect for BT of any decision by those MNOs which currently charge for unsuccessful calls to cease to do so, followed by an indication of any interaction with BT's existing price controls.

Network costs

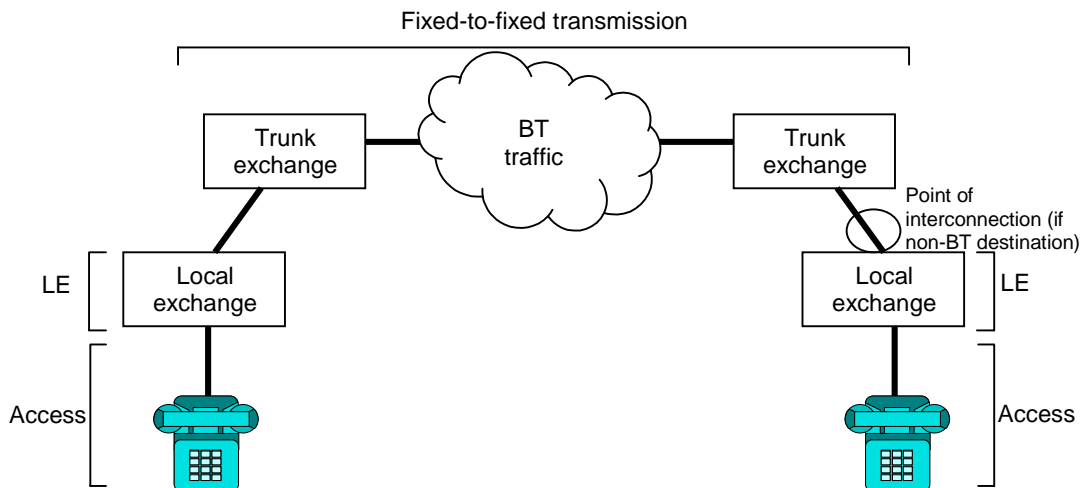
5.2. Calls to mobile phones use the same network facilities as calls to fixed phones, but in different proportions. We compared the network costs of these calls by examining the usage and cost of each component.

5.3. BT publishes the cost of operating and maintaining its network based on the value of assets comprising its national switched and local access networks. Using statistical information, BT is also able to determine the average use of each type of network element for different types of calls, for example national calls and calls to mobile phones.

5.4. The network components that combine to determine the cost of BT end-to-end (national, regional and local) calls are shown schematically in Figure 5.1. The number of individual network elements used (LE, TE and transmission lines) depends upon the exact nature of the call.

FIGURE 5.1

Cost components for fixed-to-fixed call

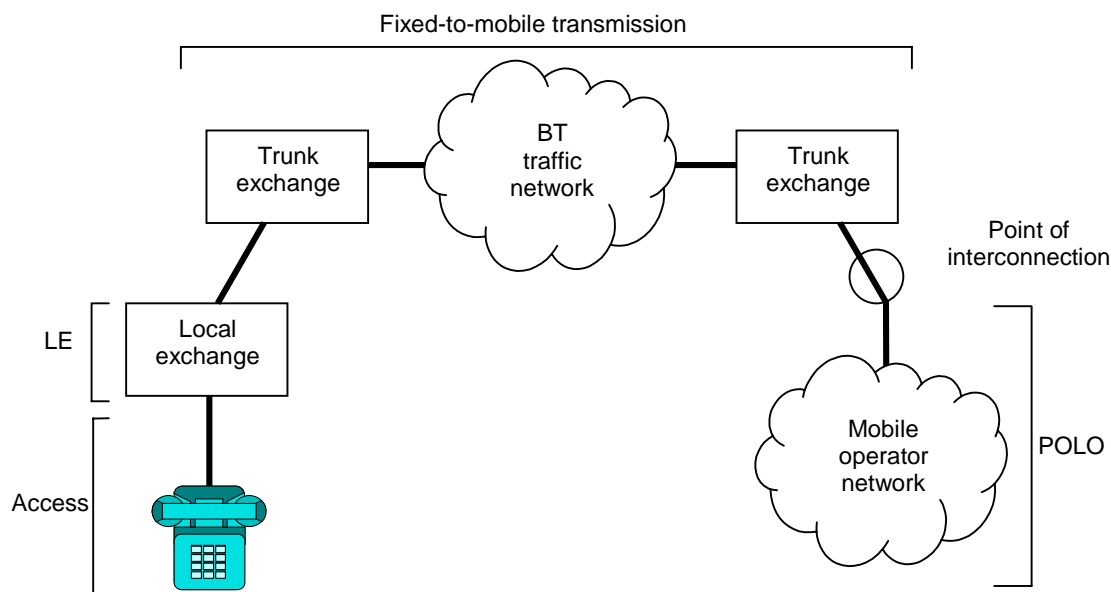


Source: MMC.

5.5. The cost components that combine to determine the cost of a call to a mobile network are shown in Figure 5.2. Mobile transmission costs include the average cost of connecting a call between the LE and the POI with the MNO.

FIGURE 5.2

Cost components for calls to a mobile network



Source: MMC.

5.6. The details of the way in which the elements of the underlying network are divided for cost accounting purposes were changed from 1 October 1997 to reflect more accurately the actual cost structure. The changes included increasing the number of distinct trunk network elements from six to nine. Table 5.1 lists the network elements used for cost accounting purposes before and after 1 October 1997.

TABLE 5.1 Network elements used for cost accounting purposes

Up to 30 September 1997	From 1 October 1997
Local exchange	Local exchange concentrator
	Local exchange processor
Main and digital junction switching	Main and digital junction switching
Junction transmission link	Local to remote transmission switching
Junction transmission length	Local to remote transmission length
Trunk transmission link	Local to tandem transmission switching
Trunk transmission length	Local to tandem transmission length
	Tandem to tandem transmission switching
	Tandem to tandem transmission length

Source: BT.

5.7. BT calculated the average cost of providing the network service over the full year 1997/98 by weighting the cost figures for each six-month period by the traffic conveyed in each of them. This gave an average cost of 0.772 ppm. Details of these calculations are given in Appendix 5.1.

5.8. Appendix 5.1 also sets out comparable costs for other types of call. BT's network cost of calls to mobile phones is lower than that for national and local calls because BT only has to convey the former to the nearest POI, whereas it has to convey the latter to the called phone.

BT Retail Systems business

5.9. The framework of Condition 20B of BT's PTO licence, under which BT prepares various financial statements for its businesses and activities, is described in paragraph 3.54. Within the BT Retail Systems business there are eight activities; of these, four deal respectively with local, national, international and fixed-to-mobile calls, while the remaining four—directory enquiry, public pay-phones, private circuits and other retail activities—cover further aspects of the Retail Systems business.

5.10. A summary of the profit and loss accounts and the mean net assets of the four call-related activities for the four years from 1994/95 to 1997/98 is shown in Table 5.2 and additional details are given in Appendices 5.2 to 5.5.

TABLE 5.2 BT Retail Systems business: summary of HCA financial results of call activities

	1994/95	1995/96	1996/97	1997/98
<i>Local calls</i>				
Turnover (£m)	2,081	2,028	1,987	1,983
Return (£m)	943	963	922	906
Mean net assets (£m)	145	446	531	272
Return on:				
Turnover (%)	45	47	46	46
Mean net assets (%)	650	216	174	333
Call volume:				
Call minutes (m)	66,328	67,638	75,756	77,890
Call numbers (m)	24,685	24,208	25,479	24,868
<i>National calls</i>				
Turnover (£m)	1,778	1,709	1,580	1,472
Return (£m)	846	826	875	823
Mean net assets (£m)	80	389	497	268
Return on:				
Turnover (%)	48	48	55	56
Mean net assets (%)	1,057	330	176	307
Call volume:				
Call minutes (m)	31,351	33,424	31,195	32,200
Call numbers (m)	8,238	8,817	8,897	9,022
<i>International calls</i>				
Turnover (£m)	1,673	1,694	1,543	1,279
Return (£m)	681	653	649	479
Mean net assets (£m)	841	925	1,075	823
Return on:				
Turnover (%)	41	39	42	37
Mean net assets (%)	81	71	60	58
Call volume:				
Call minutes:				
Outgoing calls (m)	2,384	2,649	2,581	2,920
Incoming calls (m)	2,937	3,263	3,180	3,597
Call numbers:				
Outgoing calls (m)	543	628	566	630
Incoming calls (m)	829	957	863	962
<i>Calls to mobile</i>				
Turnover (£m)	389	458	532	657
Return (£m)	(43)	(103)	25	50
Mean net assets (£m)	(74)	(109)	12	11
Return on:				
Turnover (%)	N/A	N/A	5	8
Mean net assets (%)	N/A	N/A	208	455
Call volume:				
Call minutes (m)	1,262	2,018	2,199	2,852
Call numbers (m)	1,240	1,677	1,970	2,225

Source: BT.

Notes:

1. The results and mean capital employed of the call activities of the BT Retail Systems business are shown after taking account of regulatory decisions and (where applicable) a restatement of prior years' figures.

2. Until 7 February 1996, BT Retail Systems business paid ADCs to BT Access. Such payments made in 1994/95 and 1995/96 have been excluded from the table in order that the results are shown on a consistent basis over the four-year period.

5.11. The reported percentage returns on turnover and on mean net assets are affected by particular features of the call activities. Turnover includes the POLOs for call termination. In the case of the local and national call activities, POLOs represented a relatively small part of the total turnover (in 1997/98, 8 per cent and 3 per cent of the turnover respectively) which reflected the fact that the bulk of such calls by BT customers still originate and terminate on the BT network. In the case of international and fixed-to-mobile calls, however, the POLO element of turnover was considerably larger (in 1997/98, 31 per cent of turnover for outgoing international calls and 71 per cent of the turnover for fixed-to-mobile calls). The international calls activity as shown in the financial statements includes revenue and costs for both incoming and outgoing calls. Under the bilateral agreements with overseas operators, the retail charge for a call is collected by the originating operator but that part of the retail charge which represents international conveyance (the accounting rate) is split between the originating and receiving international operators. For outgoing international calls the outpayment is the payment by BT to the receiving international operator, while for incoming international calls BT receives an income stream from the originating international operator. The retail mean capital employed varies considerably from year to year. The mean capital employed is in any case small in relation to turnover and return, hence the substantial return expressed as a percentage of capital employed.

Calls to mobile activity

5.12. There are four main categories within the operating costs of the calls to mobile activity—payments to other operators for call termination, conveyance of calls on the BT network, other BT network charges and retail costs.

5.13. Payments to other operators for mobile call termination are made at the rates for interconnection agreed by BT with individual MNOs. In default of agreement between operators, the respective PTO licences provide for determination of interconnection charges by the DGT. As noted in paragraph 4.129, BT has to date operated on the basis of agreed interconnection charges and has not sought a determination from the DGT, as CWC had done in 1991 in respect of its interconnection with Vodafone and Cellnet.

5.14. The charges from BT Network to BT Retail for the conveyance of calls originating on the BT network are made at rates which apply to all operators and are subject to the network charge control set by the DGT. The components making up the BT network and their use in the conveyance of calls are described earlier (see paragraphs 5.4 to 5.7). BT Network publishes a price list showing the charge for the use of each element of the network or service. The average combination of the use of network elements—and hence the charge—for each type of call is based on periodic surveys of traffic passing over the network. Until the end of September 1997 the charges for use of BT's network were arrived at on the basis of fully allocated HCA costs, but from October 1997 the charges have been set by reference to LRIC information (with a mark-up for fixed common costs). The main network charges are now subject to a network charge control over three different baskets of services with a price control formula of RPI-8 per cent. In 1997/98 the total charge from BT Network to the calls to mobile activity for call conveyance was £18 million.

5.15. In addition to call conveyance charges the calls to mobile activity pays BT Network for intermediate services (the recovery of certain non-chargeable services, such as emergency calls); product planning, policy and management (costs associated with the management of interconnection traffic); and an allocation of the cost of the use by BT Retail of the BT network for the operation of its own business. These other costs in 1997/98 for the calls to mobile activity totalled £4 million.

Allocation of retail costs

5.16. In 1997/98 the allocation of retail costs to the calls to mobile activity in the audited accounting separation statements (prepared in accordance with the Accounting Documents) was £94 million. As described in paragraph 3.17, BT is organized and managed on the basis of divisions, which for accounting purposes are split into a set of smaller entities known as operational units. BT records costs on a divisional basis by cost type and by operational unit. The costs are grouped into similar cost types and are further aggregated into cost sectors such as sales and marketing; customer

service; and finance and billing. For the accounting separation statements, BT has a complex cost apportionment hierarchy to allocate fully all divisional costs to the various businesses and activities. First, all costs that can be directly assigned to a business or activity are so assigned. Next, the costs that can be directly attributed based on financial or non-financial data are attributed. Certain costs which can neither be assigned directly nor directly attributed are indirectly attributed using the same basis as other previously attributed costs (usually pay costs). Finally, any remaining common costs are allocated across all businesses and activities using an appropriate allocator.

5.17. The underlying principles and methodologies for the allocation of costs are set out in the Accounting Documents, which in accordance with Condition 20B of BT's PTO licence have been agreed between BT and the DGT and are regularly reviewed and, where relevant, amended. In the absence of agreement on the Accounting Documents, the DGT has power under Condition 20B.18 of the PTO licence to direct BT to amend the Accounting Documents if, after reviewing them, he is satisfied they are deficient. Further details on the allocation procedure are contained in the detailed attribution methods (DAM) document which is published by BT. The audited accounting separation statements are submitted by BT to the DGT in advance of publication. BT is required to publish with the statements any comments on them by the DGT. In their evidence to us BT and the DGT had somewhat differing views on the extent to which the Accounting Documents and the DAM had been endorsed by the DGT. 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.

5.18. The retail operating costs of the BT Retail Systems business result from a number of tasks that BT undertakes to acquire and retain customers. The retail divisions of BT are customer-focused and the retail costs are rarely incurred for the benefit of a single business or activity, as defined for the purposes of accounting separation. This leads to the need for a considerable degree of attribution and allocation of retail costs first to BT Retail and then within the BT Retail business to the constituent activities. A summary of the 1997/98 results for the four call-based activities of BT Retail is shown in Appendix 5.6. In addition to monetary amounts, the figures expressed in ppm terms are also shown.

5.19. In Appendix 5.6 the BT retention on each type of call is identified. The main items of cost which we consider are BT's own network charges, retail costs and BT's return which together make up the retention. The retention is the revenue that the BT group as a whole receives in order to cover BT's costs and to provide a return for the calls activities (the return earned by the BT network at the appropriate rate set by the DGT is included in BT's own network charges). In normal circumstances the retention will represent the revenue (net of discounts) after deduction of the POLO. However, in arriving at the 'adjusted retention' in Appendix 5.6 an allowance has been made for costs of terminating calls which both originate and terminate on the BT network. In the case of the inland calls activities (local and national calls), most calls handled by BT Retail originate and terminate on BT's network, so network costs (which form part of the retention) reflect the cost of conveying the whole call. In the case of fixed-to-mobile calls, all calls are terminated on the network of one of the MNOs with the result that the retention on fixed-to-mobile calls covers conveyance only to the point of inter-connection with the MNO. In order to permit direct comparisons between the levels of retention on different types of call, a deduction has been made from own network conveyance (and hence the retention) for the call termination service on inland (and some international) calls: the effect of this is to treat the costs of inland call termination in a similar way to the POLO for fixed-to-mobile calls.

5.20. It will be seen from Appendix 5.6 that the retail costs for local calls were 0.41 ppm, for national calls 0.73 ppm and for international calls 2.90 ppm. The equivalent costs for fixed-to-mobile calls in 1997/98 were, at 3.29 ppm, substantially higher than those for other types of call. The figure for international calls was calculated on the total of both incoming and outgoing calls; if calculated by reference to outgoing calls only, the equivalent figure for international calls was 6.46 ppm because for international calls both generate revenue for BT. The DGT told us (see paragraph 7.26) that the relatively high level of retail cost allocation to the calls to mobile activity resulted from the widespread use by BT of turnover (ie revenue) as an allocation basis. The turnover of the calls to mobile activity included a proportionately higher POLO compared with other types of call, with the result that fixed-to-mobile calls attracted a higher allocation of retail costs than did other inland calls. The DGT said that he would be investigating in more detail the way that BT had interpreted the principle of cost causality under the Accounting Documents with a view to his seeking changes to the accounting separation cost allocation processes. The DGT said that he considered that in the meantime it would be appropriate to consider a retention level for the calls to mobile activity in line with the weighted aver-

age of the retention on inland (local and national) calls. The DGT identified a figure of 2.6 to 2.7 ppm¹ which he calculated by reference to the weighted average inland revenue in 1997/98 of 3.14 ppm, less an allowance for BT's own network costs of 0.52 ppm.

5.21. Both BT and the DGT provided submissions on the robustness of the retail allocations in use by BT. Consultants for BT reviewed the cost allocation methodology used for £72 million of the retail costs of the mobile calls activity in 1996/97 of £89 million; the remaining £17 million of costs were below the materiality level for the review. The consultants concluded that in their view the apportionment basis for £37 million of costs was entirely appropriate, for a further £15 million the apportionment basis was reasonable and for the balance of £20 million alternative attribution bases were to be preferred. BT estimated that the use of alternative attribution bases for the 'reasonable' category could result in a reduction in costs of some £9 million, or possibly in an increase in costs, though the consultants considered that the alternatives considered were not necessarily more objective or economically sound. BT estimated that an alternative attribution for the category where some other basis was to be preferred would lead to a reduction in retail costs of the calls to mobile activity of a further £10 million.

5.22. The 1996/97 retail costs of the calls to mobile activity of £89 million which were reviewed by consultants to BT are shown in Table 5.3, together with BT's total charge for the relevant retail costs and the proportion of this total allocated to the calls to mobile activity.

TABLE 5.3 BT retail costs, 1996/97

	BT total £m	Calls to mobile £m	%
Marketing and sales	<div style="display: flex; align-items: center; justify-content: center;"> <div style="font-size: 4em; margin-right: 10px;">{</div> <div style="text-align: center;"> <p><i>Figures omitted.</i></p> <p><i>See note on page iv.</i></p> </div> <div style="font-size: 4em; margin-left: 10px;">}</div> </div>		
Finance and billing			
Computing			
General management and other			
Customer service			
Depreciation			
Personnel and administration			
Planning and development			
Redundancy			
Other			

Source: BT.

Information provided by BT on each of these main cost headings is set out below.

Marketing and sales

5.23. Within the £[] million of marketing and sales costs allocated to the calls to mobile activity, the two main constituents were publicity of £[] million and the national sales force of £[] million. Publicity costs were primarily the creative costs of advertising campaign design and production and of media buying on television, radio and newspapers. BT told us that where a campaign related specifically to a single business or activity the costs of the campaign were attributed wholly to that service and that where a campaign related to a number of services the turnover of the relevant business or activity (or other relevant information) was used as the basis for attributing the costs of the campaign. There were two distinct groups in BT's business division field sales force, one dealing with outbound calls and one with incoming calls; none of the costs of the incoming calls sales force were attributed to the calls to mobile activity. The payroll costs of the outbound calls sales force were attributed to businesses and activities by reference to relevant turnover.

¹An earlier calculation by the DGT using December 1997 data had resulted in a retention of 3.39 ppm.

Finance and billing

5.24. The principal items within finance and billing costs of £[] million allocated to the calls to mobile activity were bad debts of £[] million, billing staff costs of £[] million and Post Office handling costs of £[] million. The underlying assumption used by BT for bad debt costs was that the incidence of bad debts was proportionate to the turnover generated by each activity. The billing staff undertook a number of duties including the checking of bills prior to dispatch, debt limitation, collection of overdue debts, answering customer queries and administration of the direct debit scheme. BT had a number of processes in place to attribute the costs, wherever possible by direct attribution. Most costs, however, related to staff units performing functions related to more than one activity and in that case turnover was the basis in use for allocation.

Computing

5.25. This represented the costs of running and maintaining the computing systems such as those required for BT's customer billing operation. Costs were allocated by reference to the expected volume usage for each computing service provided, with the relevant turnover for that element of the computer subsystem in practice often having been used as the basis of allocation.

General management

5.26. Part of the general management costs in 1996/97 attributed to the calls to mobile activity related to the salary costs of the managers of the outbound calls sales force. Attribution to businesses and activities was on the basis of the previously attributed pay costs of the staff managed. Since the retail sales force attributions involved the use of turnover, the allocation of general management costs was indirectly made by reference to turnover generated by the different types of call.

Customer service

5.27. Customer service costs included the payroll costs of BT's customer service staff who worked on the '150' (sales and billing queries and complaints) and '151' (fault reporting and repair requests) enquiry lines. BT told us that that activity was evenly split between the two lines, though none of the 151 costs were attributed to fixed-to-mobile calls as the faults reported related mainly to the access and network businesses. Customer service staff recorded the reason for every call answered, and the total number of calls, weighted by the average handling time for each reason code, was split into five categories of which the main ones were sales queries and billing queries. Costs were allocated to categories on the basis of the derived split and then attributed to the relevant businesses and activities mainly by reference to the appropriate relevant turnover.

Depreciation

5.28. BT kept depreciation costs separate from individual cost categories; for instance, depreciation on transport was included in the depreciation cost category, while transport costs themselves were included in the transport sector of other costs. Most depreciation was allocated on the basis used to allocate the costs of the activity to which it related. More than half the depreciation charge was for the core computing equipment of the computer services and operations department, some of whose costs (see paragraph 5.25) were allocated by reference to turnover.

Personnel and administration

5.29. These costs included payroll costs of personnel staff, training costs, company mobile phone charges and catering costs. The costs were attributed to businesses and activities on the basis of previously attributed pay of the staff they supported. However, the costs of many of the activities

involving staff were themselves allocated by reference to detailed analyses, which were often supported by relevant turnover.

Planning and development

5.30. These costs included network development costs, the costs of research and development projects and the cost of software and computer systems upgrades. BT provided us with a number of examples of the way project costs had been allocated to particular activities. The residual basis for allocation was by reference to turnover.

Redundancy

5.31. Redundancy costs were the sum of the total redundancy payments made by each operating division and the costs of providing incremental pension benefits to employees taking early retirement. For regulatory accounting separation purposes redundancy costs were being amortized by BT over a three-year period. Allocation of redundancy costs was by reference to relevant pay costs, so, for the reasons already explained, the allocation was influenced by the turnover of businesses and activities.

Other costs

5.32. Other costs totalling £[] million included systems support (£[] million), accommodation (£[] million), non-core costs (£[] million) and transport (£[] million); with an offset of £0.5 million for an allocation of interest received.

Alternative allocation of retail costs

5.33. We raised with BT the extensive use of turnover as an attribution basis for costs, since the inclusion in the calls to mobile activity turnover of a substantial POLO meant that the turnover of each fixed-to-mobile call was higher than that of an inland call and so the retail costs allocated to fixed-to-mobile calls were higher than those of other inland calls. Alternative allocation bases such as a measure of volume of traffic might give a more even distribution of costs. BT told us that one reason for the use of turnover was that it was a common measure between businesses; for instance, the access business did not have a comparable measure of volume of traffic. In BT's view, though, the attribution bases it used were both justified and reflected the way costs were driven. In addition, BT said that the attribution bases complied fully with the principles set out in the Accounting Documents which underpinned the accounting separation process.

5.34. In response to our concerns, BT provided us with an alternative allocation of the 1997/98 retail costs of £94 million which reduced the allocation to the calls to mobile activity by £28 million to £66 million (a reduction from 3.29 ppm to 2.30 ppm). This exercise involved the use of turnover net of outpayments to other operators and the number of calls as additional retail cost attribution bases. The use of turnover net of outpayments for the attribution of, *inter alia*, marketing and sales, customer service and some billing costs resulted in a reduction from the accounting separation allocation to the calls to mobile activity for those items from £23.2 million to an amount of £8.7 million. Similarly the use of the number of calls to allocate computing and planning and development costs reduced the allocation from £21.0 million to £8.9 million. Other cost categories were largely kept on the bases used for the accounting separation statements.

5.35. There were some methodological difficulties over the use of turnover net of outpayments as an allocation basis since any reallocation of costs altered the values by reference to which the allocations of retail costs were being made. This in turn led to questions over whether assumptions should be made as to consequential changes in retail prices, which, by changing turnover, led to still further changes in cost allocation. As an alternative, BT later provided further calculations in which some costs were attributed by reference either to turnover or to the number of calls, and the remaining retail costs, for which the causal driver was less obvious, were allocated between the four call types on the

basis of (EPMU).¹ BT pointed out that EPMU was the allocation basis included in the Interconnection Directive,² though the Directive did not apply directly. The resulting allocation of retail costs to the calls to mobile activity for 1997/98 was £54 million (1.90 ppm), as shown in Table 5.4.

TABLE 5.4 BT: alternative allocation of retail costs to calls to mobile, 1997/98

	<i>£m</i>	<i>ppm</i>
Turnover-related	19.1	0.67
Call number-related	14.6	0.51
Profit-related	(0.8)	(0.03)
Allocated by EPMU	21.2	0.74
Rounding	-	<u>0.01</u>
	54.1	1.90
Call minutes (m)	2,852	

Source: BT.

However, the costs allocated by direct attribution, on the basis of which the remaining costs were allocated by EPMU, included attributions of costs by reference to turnover. As a result turnover continued to influence the allocation of the remaining retail costs.

5.36. We reviewed the retail costs on an item-by-item basis to identify those costs where there was a reasonably direct link to a particular attribution basis. Drawing on the accounting separation methodology and the alternative allocations provided to us, BT's cost allocations fell into four categories: costs linked to turnover, those linked to number of calls, those linked to other specific factors such as profitability and the remaining costs. The first category of turnover-linked costs included bad debts, debt collection and the commission paid to the Post Office for the sale of telephone stamps used to pay bills. The evidence of an exact link to turnover was not conclusive, since the propensity for bad debts to arise might vary according to type of customer making the call. BT carried out some further analysis of the position for us, but it did not extend to a full assessment of all such factors. BT also continued to include in the turnover-related category 40 per cent of the costs of the field sales force (£[] million, part of marketing and sales) on the grounds that the remuneration of the sales force was to a considerable extent related to achievement of turnover targets.

5.37. The category allocated by number of calls included computing, finance and billing, planning and development and customer service. In the case of these items there was some link between the incidence of costs and the volume of traffic. For instance, with itemized billing the billing costs (and associated computing costs) could be seen as driven by the number of calls made and hence line items on the bill.

5.38. The only item related to profit was the allocation of interest received. The capital employed in the BT Retail Systems business varied from year to year. Interest received was allocated by BT in the accounting separation statements on the basis of past profitability on the grounds that the funds invested and earning interest represented retained profit. There was no obvious alternative basis for allocation between activities.

5.39. As an alternative to the use of EPMU for allocation of the remaining costs we considered what the effect would be of using either turnover net of outpayments or call minutes on the allocation basis. For this purpose we included in remaining costs the portion of the field sales force that BT had continued to include in turnover-related costs. The use of turnover net of outpayments (and with an adjusted return taking account of reallocation of costs) resulted in an allocation of other costs of 0.52 ppm and, of call minutes, one of 0.44 ppm; together with costs attributed by other methods the total retail costs were 1.53 ppm and 1.45 ppm respectively.

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

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

5.40. Table 5.5 contains the allocation of retail costs for 1997/98 referred to above showing:

- (a) the original position as reflected in the published accounting separation financial statements (3.29 ppm);
- (b) the first alternative allocation (2.30 ppm) incorporating some allocations by call numbers and by turnover net of POLO;
- (c) the second alternative allocation involving the use of EPMU (1.90 ppm); and
- (d) the use by the MMC of call minutes for the other retail costs (1.45 ppm).

The cost categories have been grouped into the categories used in the second alternative allocation, though that was not necessarily the basis used in the earlier allocations.

TABLE 5.5 BT: comparison of alternative retail cost allocations, 1997/98

	Accounting separation		First alternative		Second alternative (EPMU)		MMC (call minutes)	
	£m	ppm	£m	ppm	£m	ppm	£m	ppm
<i>Turnover-related</i>								
Bad debts	[Figures omitted. See note on page iv.]							
Debt collection								
Post Office commission								
Field sales force (40%)								
Total	19.1	0.67	19.1	0.67	19.1	0.67	14.9	0.52
<i>Call number-related</i>								
Computing	[Figures omitted. See note on page iv.]							
Planning and development								
Billing								
Customer service								
Other finance								
Depreciation—part	29.4	1.03	12.1	0.43	14.6	0.51	14.6	0.51
Total								
<i>Profit-related</i>								
Interest received	(0.8)	(0.03)	(0.8)	(0.03)	(0.8)	(0.03)	(0.87)	(0.03)
<i>Allocated using EPMU/call minutes</i>								
General management	[Figures omitted. See note on page iv]							
Personnel and administration								
Redundancy								
Publicity								
Other marketing								
Field sales force (60%)								
Post Office handling								
Depreciation—part								
Other retail costs	46.2	1.62	38.3	1.23	21.2	0.74	12.6	0.44
Total								
Rounding						0.01		0.01
Total retail costs	94.0	3.29	65.7	2.30	54.1	1.90	41.3	1.45

Source: BT.

[Details omitted. See note on page iv.]

Other costing matters

5.41. In view of possible alterations to the method used for allocating retail costs, BT raised two other aspects of the present accounting separation process which it considered should be taken into account in assessing the financial results of the calls to mobile activity: the treatment of call set-up in the network charging arrangements and the deficit arising in the BT Access business.

Call set-up adjustment

5.42. Prices for conveyance under the current network charge control are made on a ppm basis, with no recognition of the extra processing resources consumed during the call set-up phase (see paragraph 3.29). As the average length of a mobile call is shorter than that of an inland call, the network conveyance charges for fixed-to-mobile calls tend, according to BT, to understate the cost of network use. BT calculated that, for 1997/98, application of a two-part tariff, with call set-up being charged for separately from call hold, would have resulted in an average additional charge from BT's network of 0.295 ppm. If the present trend of increasing call length relative to that of other calls were to continue, the relative understatement of fixed-to-mobile call costs would diminish in future years. These issues are discussed further in Appendix 5.7.

Access deficit contribution

5.43. In recent years the accounting separation statements for the BT Access business have shown an operating loss in both HCA and CCA terms. Additionally, BT Access has substantial net assets on which BT might normally expect to earn a return. Until February 1996 BT Retail and other licensed operators made ADCs to BT Access, the effect of which was to compensate both for the operating deficit and for the absence of a return on the mean net assets. In broad terms the ADCs were set at a level such that, after crediting such contributions, BT Access was able to show a return on net assets at an appropriate cost of capital set by the DGT. In 1994/95, the last full year of the formal access deficit arrangements, BT Access incurred an operating loss on an HCA basis of £415 million (before ADCs of £1,523 million). After taking account of ADCs the return was £1,108 million, a return of 15 per cent on mean net assets of £7,443 million. Some £1,390 million (91 per cent) of the ADCs were paid by BT Retail. In some cases ADCs which otherwise would have been due from OLOs were the subject of a waiver from the DGT.

5.44. BT told us that the returns in all four call activities of BT Retail should now be viewed in the light of the need to take account of the deficit in BT Access. BT told us that in 1997/98 the access deficit calculated on the basis of an even spread over all outgoing call minutes was 0.73 ppm (HCA) and 1.04 ppm (CCA). The DGT initially confirmed to us that in setting the current retail price control for BT the existence of the access deficit was a factor that he had taken into account and that the resulting retail prices included headroom for a notional recovery of an access deficit. However, there remained some uncertainty over the extent of the allowance made for recovery within the retail price control. Alternative calculations of ADC can be made. The use of call numbers, revenue or revenue net of outpayments as the basis of calculating how the ADC is to be recovered would increase the amount allocated to fixed-to-mobile calls in view of the shorter duration and higher price per minute compared with inland calls. On the other hand, the BT Access network provides access at both the calling party end and the called party end. Most BT Retail inland calls involve use of both access facilities, whereas fixed-to-mobile calls and outgoing international calls require access only at the calling party end, since termination is on the network of another operator. Recognition of this factor might lead to a weighted distribution of the cost of access facilities in which each inland call minute contributed roughly double the amount of each mobile and outgoing international call minute towards the access deficit. We note that the convention generally applied to telephony in the UK and elsewhere is that the calling party meets in full the cost of calls.

BT's retention

5.45. In the light of our consideration of the cost elements of the calls to mobile activity and the further representations on additional factors made by BT we have calculated what the effect of using alternative cost calculations would be on BT's revenue, retention and return. A comparison of the average position as shown by the 1997/98 accounting separation statements and an alternative calculation which we made is shown in Table 5.6. The alternative calculation has been carried out using a POLO at the average 1997/98 level.

TABLE 5.6 **BT: alternative calculation of revenue and retention**

	<i>ppm</i>	
	<i>Accounting separation</i>	<i>Alternative calculation</i>
BT 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	<u>1.74</u>	<u>0.32</u>
BT's retention	5.80	3.82
POLO	<u>17.22</u>	<u>17.22</u>
Revenue	23.02	21.04

Source: BT and MMC.

The assumptions incorporated in the alternative calculation are described below.

Network charges

5.46. The figure for BT network charges of 0.77 ppm in the alternative calculation is at the same average level as shown in the accounting separation statements. A figure of 0.29p, as calculated by BT, has been included to reflect the two-part charging structure which BT told us was more appropriate (see Appendix 5.7). As noted in paragraph 5.14, the 1997/98 own network charge included conveyance calculated on an FAC basis for the first six months and on an LRIC basis for the second six months. Consistent application of LRIC-based charges in the year (which will apply in future years) would have resulted in own network charges of some 0.73 ppm.

Retail costs

5.47. The alternative calculation involves a lower average revenue per call minute than that shown in the accounting separation statements. Had this lower rate of revenue applied during the year the turnover would have been lower and as a consequence the costs which were related to turnover would have been lower. In recognition of this a revised turnover was calculated for the alternative basis using the relevant revenue per call minute. The alternative figure for turnover-related retail costs was then calculated using the same percentage of turnover-related costs to turnover as actually applied during the year. This resulted in a reduction in turnover-related retail costs of 0.04 ppm and of total retail costs (after rounding) from 1.45 ppm (see Table 5.5) to 1.40 ppm.

Access deficit contribution

5.48. An ADC at the CCA amount of 1.04 ppm has been included in the calculation of BT's retention, as the actual retention under accounting separation implicitly included a contribution to the deficit of BT Access.

Return

5.49. For the alternative calculation a return to BT has been included at the rate of 1.5 per cent of turnover. As shown in Table 5.2, the mean net assets of the calls to mobile activity in 1997/98 were only just over £11 million for a business with a turnover in 1997/98 of £657 million; the return on mean net assets in the accounting separation statements was 455 per cent. The principal items in mean net assets are working capital, since the bulk of the tangible fixed assets of BT involved in handling telephone calls are attributed to either the BT Network business or the BT Access business and a return on those assets is included in the BT network charges and ADC in Table 5.6. In place of a

return on mean net assets at the appropriate cost of capital, a return at the rate of 1.5 per cent of turnover has been applied for illustrative purposes. This rate compares with 0.5 per cent applied by the MMC in their report on Scottish Hydro-Electric plc¹ and 1.5 per cent applied more recently by the Director General of Gas Supply and the Director General of Electricity Supply in the course of their reviews of supply prices.

5.50. In their report on Scottish Hydro-Electric the MMC observed that the vast majority of the turnover of the supply business was purely a pass-through of generation, transmission and distribution charges from elsewhere in the business. The MMC considered that a profit allowance of 1 per cent on turnover, as had been proposed by the Director General of Electricity Supply in his earlier price review, was unduly generous. In setting prices at the time of privatization the Secretary of State had included a profit element of 6 per cent of CCA fixed assets. The MMC considered application of a return on the relatively small total asset base, but found this posed difficulties. First, the asset base had tended to vary from year to year, and second, if an allowance was based on a small total asset base which consisted mostly of net current assets it might give an incentive to increase the current assets rather than to seek to reduce or contain them. The MMC concluded that neither turnover nor assets by themselves were a suitable base and instead proposed a monetary amount which represented a real return of about 7 per cent of the CCA assets and about 0.5 per cent of turnover. In the course of the recent price reviews of supply businesses in the gas and electricity industries the respective Directors General incorporated a profit allowance at the rate of 1.5 per cent on turnover, in recognition of the increased risks applying in those industries as competition continued to develop.

5.51. The circumstances of the calls to mobile activity bear some resemblance to those of the energy supply businesses in that much of the service being provided is a pass-through of charges (mostly the POLO paid to the MNOs, but including charges from BT Network and recognition of the costs of BT Access) and an important part of the value added by the activity lies in marketing, customer service and billing. There is no real equivalent of the risk in energy utilities now posed by the exposure to movements in energy prices, but there is a growing element of competition in telecommunications. In addition BT's ratio of retail costs to turnover is somewhat higher than that of Scottish Hydro-Electric (6.7 per cent, as against 5.8 per cent). In response, BT said that its accounting separation rate of return on fixed-to-mobile calls as a percentage of turnover was below that on other types of call and so could not be considered 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.

Projection of BT's retention on fixed-to-mobile calls

5.52. The volume of fixed-to-mobile calls has increased more rapidly in recent years than those of fixed-to-fixed calls (see Table 4.1). Table 5.7 indicates how the BT retention of 3.82 ppm shown in paragraph 5.45 might move in future years in response to this and other factors, such as the progress of changes in technology and cost control measures. Amounts in Table 5.7 are expressed in nominal terms, for which purpose an annual increase in the RPI of 3 per cent has been assumed.

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

TABLE 5.7 BT: possible future movement in BT's retention

	<i>ppm</i>				
	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	<u>0.32</u>	<u>0.28</u>	<u>0.23</u>	<u>0.21</u>	<u>0.20</u>
BT's retention	3.82	3.65	3.40	3.26	3.13
POLO	<u>17.22</u>	<u>15.22</u>	<u>11.70</u>	<u>11.00</u>	<u>10.34</u>
Revenue	21.04	18.87	15.10	14.26	13.47

Source: MMC.

The factors underlying the projections in Table 5.7 are described below.

Network charges

5.53. Network charges are made on a ppm basis and are subject to the network charge control on BT. They are not directly affected by the rate of volume increase in fixed-to-mobile calls, though the greater the number of fixed-to-mobile calls the greater the traffic over the BT network and hence scope for lower charges. The relevant network charge control provides that a basket of network charges should fall by at least RPI-8 per cent. Although the change in individual network charges may not coincide with the overall control, network charges have been projected to fall by a net 5 per cent in each year (an increase in the RPI of 3 per cent, less the network charge control X factor of 8 per cent).

Call set-up adjustment

5.54. The call set-up adjustment has been projected to fall in line with the network charges. In addition allowance has been made for the effect of the increases in the average call length of fixed-to-mobile calls (see paragraph 5.42 and Appendix 5.7).

Retail costs

5.55. The alternative allocation of retail costs to the calls to mobile activity involved the use of a mixture of turnover, call numbers and call minutes. In order to model future trends in the level of retail costs it was necessary therefore first to identify a possible scenario for the development of the mobile telephony market and within it the share of fixed-to-mobile calls likely to be conveyed by BT. In the course of our inquiry into the termination charges of Vodafone and Cellnet, we have had to make assumptions about the overall mobile call market in order to be able to model the costs of those two MNOs. We started by asking all four MNOs and the DGT to produce their own projections for subscriber numbers and traffic volume. While the operators provided us with their projections, the DGT felt that OFTEL was not in a position to estimate traffic projections. We were also provided with a number of analysts' reports that included projections for the number of subscribers. A combination of the companies' own projections was used to produce our own high, medium and low estimates for total mobile traffic. From these we used the medium projection for modelling purposes in our reports on the MNOs, which showed both total and incoming mobile traffic growing by some 190 per cent between 1997/98 and 2001/02. We have therefore used the same forecast as the basis for our projections for BT's fixed-to-mobile traffic. It showed incoming traffic to mobile networks increasing from 5.0 billion minutes in 1997/98 to 14.6 billion minutes in 2001/02. In addition we have assumed that BT's share of the fixed-to-mobile market would fall from the current level of 75 per cent to 63 per cent by 2001/02 in line with current trends, and that the proportion of incoming traffic to the mobile networks from operators other than BT would remain constant. Other calls were assumed by us to increase by 3 per cent a year in terms of call minutes, broadly consistent with increases in recent years.

5.56. The turnover-related retail costs are derived by applying the same percentage change as applied in 1997/98 to projected turnover using the volumes described in paragraph 5.55 and the revenue per call minute shown in Table 5.7.

5.57. The call number-related costs for all call types were projected from the 1997/98 level by reference to the overall increase in call numbers, less an assumption for increased efficiency of 2 per cent a year. An assumption of an efficiency increase of 2 per cent a year is consistent with the approach taken by the MMC in other recent regulatory inquiries and with improvements generally in the service sector of the UK economy. The network and retail price controls on BT incorporate somewhat higher assumptions on increases in efficiency, but these include the effect of advances in technology in telecommunications, which do not directly apply to retail costs. No further adjustment has been made to costs (other than the efficiency gain of 2 per cent a year) to reflect cost/volume efficiencies, though the DGT told us that he would expect a cost volume elasticity (CVE) of less than 1 to apply to retail costs. The projected call numbers reflected the call minutes for each type of call, coupled with the possible future trends in call duration (see Appendix 5.7). The apportionment of costs each year between fixed-to-mobile calls and other calls was made using the number of calls of each type. Although additional costs were allocated to the calls to mobile activity because of the relatively faster increase in the fixed-to-mobile call volume, the resulting charges on a ppm basis declined. The procedure for projecting and allocating retail costs on a call minutes basis was similar to that used in the case of call number-related costs.

Access deficit contribution

5.58. The amount of the total access deficit has been falling in recent years in HCA terms as a result of a combination of static operating expenses in nominal terms and increasing income to the access business. In CCA terms the total access deficit has fallen only slightly. The scope for BT to continue to increase revenue from line rentals in the future within the retail price control is uncertain. The ADC calculations reflect a deficit maintained at the 1997/98 CCA level of £1,207 million. As the number of call minutes is projected to increase year by year, the ADC in ppm terms declines. OFTEL suggested to us that instead of recalculating the ADC each year in relation to traffic from all types of call, the recovery from the calls to mobile activity should be held at the 1997/98 monetary amount; since fixed-to-mobile call traffic is increasing faster than traffic as a whole the ADC from the calls to mobile activity, on a ppm basis, would diminish more rapidly.

Payments to other operators

5.59. The amounts assumed for the POLO each year are the outcome of the initial modelling during the course of the inquiry into MNO termination charges. The projected POLO of 15.22 ppm for 1998/99 compares with the actual average level of 14.83 ppm applying to calls to the networks of Cellnet and Vodafone from 1 August 1998. We have estimated that BT's current average retail price for mobile calls is 20.5 ppm (after allowing for factors such as discounts and before taking account of VAT). On this basis BT's present average retention would be some 5.67 ppm.

Discounts

5.60. The turnover of the calls to mobile activity is shown in the accounting separation statements after deduction of any discounts offered by BT to its customers. Accordingly the average revenue and retention in call per minute terms included in this chapter are shown net of discounts.

Charges for unanswered calls

5.61. No allowance has been made in the projections for any effect on BT's costs and retention, should those MNOs which currently charge for unsuccessful or diverted calls cease to do so. In the case of other types of call no charge is currently made for unsuccessful calls, the costs of such calls being spread over successful calls. Changing the practice on charging for unanswered fixed-to-mobile

calls would in effect bring them into line with other types of call. BT would still incur the costs of these calls, in particular the network conveyance costs and most retail costs. In the projections, both network costs and the allocation of retail costs are arrived at on the basis of allocating costs between all call types. On this view a reduced chargeable volume of fixed-to-mobile calls would not significantly affect the cost of individual calls. An alternative procedure would be to treat fixed-to-mobile call traffic separately from that of other types of call, maintain the existing total costs for the calls to mobile activity, and spread them over the lower number of call minutes resulting from ceasing to charge for unanswered calls. BT estimated that this would add 0.21 ppm to the network costs and a further 0.20 ppm to the retail cost of successful fixed-to-mobiles calls. BT told us that it would not make a retail charge for unsuccessful or diverted calls provided that these calls were no longer signalled by Cellnet or Vodafone as successful calls. Both BT and the DGT considered that provisions in BT's licence constrained BT from making such a charge to callers in such circumstances.

BT's existing retail and network price controls

5.62. If various costs currently allocated to the calls to mobile activity cease to be so, then the question arises whether, and to what extent, they should be reallocated elsewhere, and reflected in prices for other types of call. The DGT told us that application of the changes in retail costs allocated to the calls to mobile activity implied by his proposal for an amended 1997/98 retention of 2.6 to 2.7 ppm (see paragraph 5.20) would not have changed the value of X incorporated in the current retail price control for other types of call. The control price reduction was designed to eliminate a substantial excess profit, and any adjustment to the value of X in the RPI-X control to reflect costs reallocated away from the calls to mobile activity would have been lost in the rounding. However, a number of the factors described above could have implications for other parts of BT's business. BT said that its board would not necessarily have accepted the proposal if it had been associated with a higher regulated cost base.