II

(Acts whose publication is not obligatory)

COMMISSION

COMMISSION DECISION

of 8 July 1998

declaring a concentration to be compatible with the common market and the functioning of the EEA Agreement

(Case IV/M.1069 — WorldCom/MCI)

(notified under document number C(1998) 1887)

(Only the English text is authentic)

(Text with EEA relevance)

(1999/287/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to the Agreement on the European Economic Area and in particular Article 57(2)(a) thereof,

Having regard to Council Regulation (EEC) No 4064/89 of 21 December 1989 on the control of concentrations between undertakings [1], as last amended by Regulation (EC) No 1310/97 [2], and in particular Article 8(2) thereof,

Having regard to the Commission Decision of 3 March 1998 to initiate proceedings in this case,

Having regard to the opinion of the Advisory Committee on Concentrations [3],

whereas:

(1) On 20 November 1997 WorldCom, Inc. ('WorldCom') and MCI Communications Corporation ('MCI') jointly notified an operation by which the two companies would merge within the meaning of Article 3(1)(a) of Regulation (EEC) No 4064/89 ('the Merger Regulation'). As the agreement in question was entered into before 1 March 1998, the Merger Regulation was applied as it stood prior to the amendment made by Regulation (EC) No 1310/97.

(2) On 18 December 1997, the Commission informed the parties that further information was required to complete the notification, and that the time limits would be suspended pending receipt of the required information. On 3 February 1998, the parties responded, and the notification was declared complete.

(3) By decisions of 11 December 1997 and 24 February 1998, the Commission ordered the continuation of the suspension of the notified concentration pursuant to Article 7(2) and Article 18(2) of the Merger Regulation until a final decision was reached in this case.

[1] OJ L 395, 30.12.1989, p. 1; corrigendum OJ L 257, 21.9.1990, p. 13.
[2] OJ L 180, 9.7.1997, p. 1.
[3] OJ C 122, 4.5.1999.

(4) On 3 March 1998, after examination of the notification, the Commission concluded that the operation fell within the scope of the Merger Regulation and raised serious doubts as to its compatibility with the common market, and decided to initiate proceedings pursuant to Article 6(1)(c) of the Merger Regulation.

I. THE PARTIES

(5) WorldCom and MCI are both publicly traded US-based telecommunications companies. WorldCom provides services to businesses and private consumers such as switch and dedicated international, long distance and local voice and data communications (including Internet services offered primarily through its subsidiaries such as UUNet, ANS, CNS, and GridNet), '800' services, calling cards and debit cards. It has a number of subsidiaries in various European countries and is constructing fibre links in a number of European capitals. MCI offers businesses and private customers a portfolio of integrated services including long distance, wireless, local paging, messaging, information services, outsourcing and advanced global communications including Internet.

II. THE OPERATION

(6) Under the terms of an agreement of 9 November 1997 between WorldCom and MCI ('the Merger Agreement'), MCI will be merged into TC Investments Corp., a Delaware corporation and a direct wholly-owned subsidiary of WorldCom. Each share of MCI ordinary common stock will be converted into a right to receive a certain number of shares of WorldCom common stock, and each share of MCI Class A common stock owned by British Telecommunications plc ('BT') will be converted into a right to receive an agreed cash sum in US dollars. TC Investment Corp. will continue as the surviving corporation under the name 'MCI Communications Corporation', and WorldCom's name will be changed to 'MCI WorldCom'.

(7) MCI will also lose its voting rights in the Concert joint venture with BT, (including its shareholder voting rights) from the moment the WorldCom/MCI merger is put into effect. MCI will dispose entirely of its interest in Concert within a period thereafter of no longer than 127 days. Its relationship with Concert from then on will be limited to a non-exclusive distributorship arrangement.

III. THE CONCENTRATION

(8) The operation described in paragraph 6 constitutes a merger, and hence a concentration, within the meaning of Article 3(1)(a) of the Merger Regulation.

IV. COMMUNITY DIMENSION

(9) After making adjustments to reflect turnover attributable to undertakings acquired or disposed of since their last respective sets of audited accounts, WorldCom's worldwide turnover for 1996 is in excess of ECU 4 000 million, and MCI's worldwide turnover for the same period is in excess of ECU 14 000 million.

(10) The determination of Community-wide turnover under the Merger Regulation involves the allocation of turnover on a geographical basis. There are various possible methods of allocating revenue earned by telephone companies providing services which generate revenue outside the country in which they are based. On all the variants proposed, WorldCom and MCI each have Community-wide turnover exceeding ECU 250 million. WorldCom and MCI do not both achieve more than two thirds of their Community-wide turnover within one and the same Member State. Accordingly, the concentration has a Community dimension within the meaning of Article 1 of the Merger Regulation.

V. COOPERATION WITH OTHER COMPETITION AUTHORITIES

(11) The WorldCom MCI merger proposal was also notified *inter alia*, to the Antitrust Division of the United States Department of Justice ('DoJ'). The parties granted appropriate waivers in order to enable the DoJ and the Commission to exchange information supplied by the parties to the two agencies. Many firms who responded to parallel enquiries from both the DoJ and the

Commission were prepared to let the two agencies exchange information, or supplied the same submission to both.

(12) In the course of the investigation and analysis of the merger proposal there was a considerable degree of cooperation between the two agencies, involving preliminary exchanges of views on the analytical framework, coordinated requests for information, the attendance of DoJ observers at the Oral Hearing, and joint meetings and negotiations with the notifying parties.

VI. COMPATIBILITY WITH THE COMMON MARKET

A. CARRIER AND INTERNET SERVICES

(13) The parties argued that the relevant product markets for the assessment of the case should be based on those used in previous telecoms notifications considered by the Commission, including BT/MCI(I) ([4]), Atlas ([5]), and Phoenix/Global One ([6]), Uniworld ([7]) and Unisource ([8]). The parties contended that, using such definitions, there were overlaps in only three relevant product markets: corporate telecommunications services (which included voice and data packages, using, for example, X25, frame relay and Internet protocols, VPN (global virtual private networks), toll free, selected card and simple resale services, and dedicated transmission); traveller services (which included calling card, prepaid services and value added services); and carrier services.

(14) On the basis of the data supplied by the parties, it appeared that, for traveller services and corporate communications services, the parties' combined market shares would have been no higher than a few percentage points, no matter how the geographic markets were defined. Enquiries made of third parties appeared to confirm this picture, namely that any overlaps thought to arise on these two markets were not seen as a source of competition concern.

([4]) Case IV/34.857, OJ L 223, 27.8.1994, p. 36.
([5]) Case IV/35.337, OJ L 239, 19.9.1996, p. 23.
([6]) Case IV/35.617, OJ L 239, 19.9.1996, p. 57.
([7]) Case IV/35.738, OJ L 318, 20.11.1997, p. 24.
([8]) Case IV/35.830, OJ L 318, 20.11.1997, p. 1.

1. *Carrier services*

(15) In the Unisource decision, the market for carrier services was described as comprising the lease of transmission capacity and the provision of related services to third-party telecommunications traffic carriers and service providers. The most relevant services are switched transit, dedicated transit, traffic hubbing offerings and reseller services for service providers without international telecommunications facilities of their own. However, since the parties' combined share would not have been high enough to raise competition concerns (as discussed below), the question of precise market definition may be left open.

2. *Internet-related services*

(16) A significant number of third parties who responded to the Commission's initial consultations argued for the definition of a separate market, or series of markets, for Internet-related services as distinct from markets for more general data communication services. The evidence gathered tended to support the view that the Internet as a whole might not be a single market but a series of markets. Before turning to questions of market definition, it is necessary to set out some explanation of how the Internet operates.

(i) **The Internet**

(17) The 'Internet' evolved initially in the United States of America as a means of interconnecting discrete local area computer networks, such as those which might be found in an academic or government research facility. The interconnecting structure, which was run along telephone cable networks, was developed with US Government assistance, notably from the National Science Foundation ('NSF'). The aim of interconnection was to enable the various networks, or perhaps more accurately the individual computer terminals or 'hosts' within each network, to communicate with one another. (The term 'network' does not connote any particular size of operation. It can be applied to systems varying in size from small local area networks installed in, say, a single office building with a few tens of final user terminals to an extensive system of international or global interconnections with thousands of subscribers.)

(18) Networks can be run according to varying standards. The ability to send and receive data in an intelligible form between the networks comprising the Internet is only possible because all the data is exchanged according to a set of common protocols, of which the TCP/IP protocol (transfer control protocol/Internet protocol) is the most important. Data sent within a network could of course be transmitted according to a local protocol but all Internet communications with external networks would have to be via the TCP/IP format.

(19) The traffic thus exchanged consists of electronic messages broken down into a series of discrete data packets, each of which is sent separately through the system. Each data packet bears routing information enabling the switching equipment through which it passes to know to where it should be sent. The packets will be reassembled upon arrival at their intended destination, that is, another computer terminal somewhere else on the Internet, so that the message can be read by the computer user. Such packets can travel direct from the originating network to the network of final destination if there is a direct connection between the two networks concerned, or via intermediate networks if there is not. The particular types of switching equipment ('routers') through which the packets must pass are equipped with the ability to recognise the address on the packet, and to guide them on to the next switching point in their journey.

(20) The data sent via Internet can take several different forms, for example it could be mail transfers (electronic mail messages between two end-users of the Internet), or file transfers (transfers of data files either between two end-users or from a publicly available site to an end-user). A more recent development than the Internet itself has been the development of the world wide web. This is an agreed format (Hyper-Text Markup Language, or HTML) for displaying and establishing links between data on the Internet. 'Web sites' are publicly advertised address spaces on the Internet displaying data using HTML which other users can access. They contain displayed information or allow users to purchase services, or communicate with other visitors to the same site. New ways of using the Internet are constantly being developed, and efforts are currently underway to provide voice and fax telephony using the Internet protocol.

(21) The connections within networks and between networks are usually made over conventional telecommunications cable (or fibre). The underlying physical structure of most Internet networks consists essentially of the same networks used for conventional switched voice telephony, as the traffic can be carried on the same cables. However, Internet data packets are not normally sent over public switched circuits and will either travel on private leased lines, or on 'virtual network' fast packet switching services provided by telephone operators such as frame relay, X25 or ATM (asynchronous transfer mode). The points of interconnection require specialised switches and routing equipment (routers) to be able to identify Internet packets and to point them to the appropriate path out to the next point of intersection. Internet messages can also be routed over the traditional public switched telephone network (PSTN), via modems placed at the points of entry and exit to the PSTN. However, the need to hold a switched telephone circuit open for the duration of the connection, particularly for long distance transmission, removes most of the economic advantages of using packet switched data transmission. As Internet traffic and capacity demands have grown, the industry has tended to rely less on facilities originally installed for voice telephony. Newer networks, and upgrades to networks, are increasingly having to be completed with large capacity cable facilities conceived specifically with Internet use in mind.

(22) In its early pre-commercial days the Internet had a clear hierarchical structure, with local networks such as internal university networks connected to regional networks which in turn were connected to the long-distance transmission capacity (or the 'backbone' link) operated by the NSF. Data could be sent in a manner similar to the way in which conventional switched voice telephone traffic is handled. Traffic originating on individual local networks which could not be delivered on that network would be sent up to regional network level, and if not capable of being delivered there or to another connected local network, would be passed on up to the backbone. Once it had travelled to the relevant point of interconnection on the backbone, it would make its journey down through regional and local networks to the ultimate addressee.

(ii) **Commercial operation of the Internet**

(23) As the NSF withdrew in the mid-1990s from supporting the Internet, private companies took

over the role of supplying the underlying long distance connections which made the Internet possible. Some of the initial regional networks began to operate on a commercial basis, and became Internet Service Providers ('ISPs'), that is, they offered Internet access services on a commercial basis to paying subscribers. Other commercial firms entered this market as ISPs and brought new business and domestic subscribers. With each new connection the Internet grew a little more. From the time of withdrawal of the NSF, the Internet could no longer be regarded as a hierarchy of networks joined by a single unifying backbone, but as a number of networks connected to different backbones, all of the backbones requiring mutual interconnection if the dependent networks (or ISPs) were to be able to continue sending traffic to one another.

(24) The interconnections between backbones were made initially at NAPs (National Access Points), which were public interconnection points originally designated by the NSF. A NAP consists of a building or space within a building containing switching and routing equipment to which operators can connect their networks, and thereby interconnect with other networks also present at the NAP. Physical connection from the network to the NAP is usually made by a cable connection (usually referred to as 'backhaul') between the NAP and the nearest convenient node at a point on the network concerned. These original NAPs were quickly supplemented by other interconnection points conceived at the initiative of backbone providers. This second generation of interconnection points were not technically NAPs in the strict sense of the term, and are labelled by a variety of acronyms, such as MAE-East or MAE-West (MAE meaning Metropolitan Area Exchange), or CIX (Commercial Internet Exchange), but fulfil essentially the same function as a NAP. As the reach of the Internet has grown, interconnection points have also been set up outside the United States of America. The great majority of existing public interconnection points provide a facility at which ISPs can interconnect bilaterally with other users, but there is no obligation on them to interconnect with any particular ISPs at the NAP.

(25) As the Internet operates today, the ultimate consumer (or end user) of Internet services is either an individual computer user, whether business or residential, or a local area network such as the internal network of a large commercial organisation or an academic or public institution. Whatever the configuration of the final user's system, access to the Internet is usually obtained by subscribing for access services provided by an ISP.

(26) A physical connection is required between a point of access, or node, on the ISP's network, and the terminal or terminals or point of connection of the final user's network. The services provided by the ISP do not normally extend to the provision of this connection. It is usually made over the public switched telephone network (known as 'dial up access') as and when required or, for larger user clients with a need for more continuous access, through a permanent dedicated connection over a private line (or its virtual equivalent), known as 'dedicated access'. Use of the public switched network requires modems on each end of the portion of the line passed over the switched network. A private line for dedicated access could be provided by the ISP or the subscriber, but it could also be rented off a local telephone company, or indeed anyone else with the necessary installed fibre.

(27) The points of access to the ISP, whether modem ports or dedicated access ports, are known as POPs ('points of presence'). In the case of dial up access, the POPs usually consist of a telephone number on a PSTN exchange. It is usual for an ISP offering dial up access to provide subscribers with the possibility of making their connection to the POP at local call rates. Thus the ISP would normally have POPs in all local exchange areas over which service is to be offered, or, conceivably, provide toll-free or long-distance call services at local call prices (the latter sometimes being referred to as virtual points of presence). In the case of dedicated access, the POP is simply the point to which the subscriber must bring a cable connection in order to access its ISP network.

(28) The primary function of the ISP is to provide its customers with access to the Internet at large (Internet 'connectivity'). Hence it must deal with traffic generated either by the customer or destined for him. Traffic sent by the customer

to its ISP can either be terminated on the same network, assuming it is intended for another subscriber connected to the same network (so-called 'internal' traffic), or passed on to another network ('external traffic'). For most networks the vast bulk of traffic is likely to have to be passed on to another network for delivery. If the originating network has a direct connection with the network on which the intended customer is to be found then the traffic can be exchanged directly between the two networks. But if the two networks concerned have no direct interconnection, then some means must be found of passing the traffic through one or more intermediate networks through which access to the desired network can ultimately be reached. Traffic which passes through intermediate networks in this way is known as 'transit' traffic. Every successive network through which traffic is passed introduces the risk of further delay, and packet loss through congestion. There is therefore a premium on limiting the number of 'hops' through which messages have to pass.

(29) The parties argued that the number of hops through which a message has to pass bore no relation to the number of networks through which it is sent, but depended on the architecture of the networks concerned. Thus a message routed entirely within one network might pass through more hops than a message sent through a number of successive networks. The essential point is, however, that an ISP is able to control the number of internal hops within its own network by appropriate design of network architecture, but has no control over the number of hops in external networks with which it must deal. A network which is losing its competitive edge because of an unduly large number of internal connections or insufficient capacity has the possibility to remedy the problem. A network depending on others for its Internet connectivity, that is reliant on purchasing transit, has far less ability to rectify the problem.

(iii) **Interconnection**

(30) In physical terms the options available to any network for interconnection are relatively limited. Two ISPs can either agree to interconnect directly with each other, or a group of ISPs may agree on multilateral interconnection at a common point. Multilateral interconnection has been tried on some occasions (notably at the Commercial Internet Exchange (CIX)) but this is not a model which has been generally followed.

(31) Broadly speaking there are four different ways in which ISPs might agree to allocate the costs and risks of interconnection. Such agreements can provide for either restricted or unrestricted transmission of traffic across the interface. For each choice there is the option of traffic exchange on a settlement-free, or on a payments basis. In practice the vast majority of interconnections in use today use one of two models, either they are peering arrangements in which there are no settlements but there are restrictions on the type of traffic which can be exchanged, or they are transit arrangements, in which there are no restrictions on the type of traffic which can be exchanged, but payments are made.

(a) *Peering*

(32) The precise terms of any peering arrangement are essentially a matter to be settled between the two parties concerned, but the usual form of peering arrangement is one under which Network Operator A (or ISP A) agrees to accept from Network Operator B (or ISP B) all traffic originating from B's customers which is to be terminated on A's network. In return, B accepts a reciprocal obligation to terminate all traffic originating from A's customers and destined for B's network. Each party generally pays the cost of 'backhaul', that is, the connection from the nearest node on his network to the point of interconnection with the peer, and his own costs associated with the interconnection itself.

(33) Such peering arrangements are usually on a 'bill and keep' basis, that is to say that there are no settlement payments levied by one side on the other for traffic which passes across the interface. In order to prevent either party exploiting this arrangement, it is usual to find that the peering agreement is limited so as to prevent either party using it to hand off to the other traffic destined for or coming from a third party (that is, transit traffic). Thus, if A has a peering agreement with B but not with C, and B has a peering agreement with C, A cannot use his peering agreement with B as a way of getting B to pass his traffic to C. Similarly, A is

not obliged to accept from B any traffic addressed to him but which he knows to have originated from C.

(34) Until recently most peering took place at NAPs or equivalent public interconnection points. The precise rules on the form of interconnection vary from one NAP to another. In most cases (of which CIX or the Commercial Internet Exchange is a notable exception) there is no automatic right or obligation on any user of the NAP to interconnect with any other user of the NAP. At most NAPs therefore, each user must reach an individual bilateral peering agreement with any and every other user at the NAP with whom he wishes to exchange traffic. It is usual for any ISP with claims to be a provider of backbone services to need to interconnect with other backbone providers at more than one, and usually at several NAPs. The need for connections at multiple NAPs has become more acute as the traffic demands on individual NAPs have increased, and congestion and delay at NAPs has become a fact of life.

(35) Largely in order to avoid such problems, larger players in the industry have begun to establish private interconnection points (known as 'private' or 'direct' peering) at which they make direct bilateral connections with only one other ISP. This arrangement avoids some of the problems associated with multi-occupancy at the NAPs but also tends to create a separate class of ISPs who are independent of the NAPs, and who operate under somewhat different conditions to their NAP-bound competitors.

(36) There is a likelihood in any peering arrangement, particularly against the background of continuing growth in Internet usage, that at least one of the two peers will want to see continuing capacity and technical upgrades of the connection as the price of maintaining the arrangement. The continuation of the peering arrangement may depend to a great extent on the willingness of each party to accommodate the desires of the other in terms of how the connection should be managed. This might include, for example, readiness to meet the costs of mutual capacity or technical upgrades. It has also become increasingly common for the larger or technically superior of the two networks involved to demand certain minimum standards of network quality, traffic flow, and technical support before peering will even be considered. Some of the larger ISPs have published 'peering policies' which purport to make their conditions for peering overt, although ultimately the decision by an ISP as to whether to peer with any other is a commercial one, and any peering policy can only be a guide to what they may or may not be prepared to accept.

(37) In the culture of the Internet, peering has always been regarded as a cost-sharing, no-settlement arrangement, and the rules of many NAPs would prohibit formal 'paid peering' arrangements. In line with this general approach, ISPs either agree to enter into settlement-free peering, or they enter into 'customer/provider' or transit relationships. Where there is approximately equality of bargaining power between networks, there is little incentive on either side to demand or to agree to give payment for a peering interconnection. This distinction shows signs of breaking down, in that the largest networks are beginning either to offer paid peering to those to whom they refuse settlement-free peering as an alternative to transit, or to impose very strict conditions which in cost terms amount to the same thing for the smaller network. Indeed, where there is a clear imbalance in bargaining power, there is nothing to prevent the larger ISP from either demanding outright payment for peering, or imposing conditions which amount to the same thing. In such relationships the term 'peer' can be misleading, because the ISP who is obliged to pay has his cost structure dictated to some extent by the superior ISP, and the relationship is akin to a purchase of interconnection.

(b) *Transit services*

(38) The definition of customer traffic for the purposes of the normal form of peering agreement includes traffic originating not only from the final user customers of a peer, but also traffic from any customers which are themselves ISPs (hereinafter referred to where appropriate as 'dependent ISPs' or 'dependent networks'). The fact that traffic from dependent networks can be exchanged across a peering interface

allows a peering ISP to offer on a commercial basis a 'transit' service to customer or dependent networks. The peering ISP can pass his own and his customers' traffic across a peering interface and it can be delivered not only to direct final users on the network on the other side of the peering interface, but also to customers of dependent networks of that peer.

(39) It should be noted that the use of the term 'transit' in this context implies a slightly different usage than is normally encountered. In many industries the term transit is used where goods are entrusted to an intermediary carrier for delivery to a third-party addressee. So-called transit traffic on the Internet spends much of its time ascending or descending through successive hierarchies which are linked to one another by vertical customer/provider relationships. The only time in which there is a horizontal movement between networks not in a dependency relationship to one another is when the traffic crosses a peering interface, which it will usually do only once in its journey. The purchase of a transit service could therefore be more accurately described as a right on the part of an ISP to have his traffic treated as the traffic of the transit provider's network for the purpose of exchange across a peering interface.

(40) Internet connectivity therefore represents a service which can be sold and resold on a commercial basis at any level of the ISP hierarchy. There is nothing to prevent an ISP setting up in business to provide connectivity from obtaining such connectivity purely through a customer relationship with a superior network (although their main profit-making activity may be the provision of value added or on-line services on top of the basic connectivity offering). All trafic to and from his customers will have to pass through the transit-providing network. ISPs who function in this way are described as resellers.

(iv) **The structure of the Internet**

(a) *The top-level networks*

(41) Although ISPs may turn successively to yet larger ISPs for the provision of transit services, there is a logical limitation to the process. Traffic which is progressively defaulted to higher level networks will finally end up in the hands of an ISP who has no one else to whom to turn, and must either assume responsibility on its own account for delivering the traffic across peering interfaces, or return it undelivered. These networks (or the ISPs concerned) are referred to hereon as 'top-level networks' or 'top level ISPs'.

(42) The possession of peering agreements with all other top-level networks is a necessary condition on the part of any ISP wishing to be a top level network. Thus if there are four top-level networks in the Internet — A, B, C and D — A can deliver traffic to B, C or D because he has separate peering agreements with each of them. Any customer of A can also obtain the delivery of his traffic to B, C or D, as well as, of course, to A. All the ISPs at any level who do not have peering agreements with A, B, C and D cannot offer full connectivity unless they obtain transit services, whether directly or indirectly (that is, through an intermediate ISP) from at least one of the four.

(43) Without such top-level networks taking ultimate responsibility for the delivery of all defaulted traffic from subordinate networks, no single ISP would have such responsibility, and packets could be trapped in endless loops. The top level ISPs therefore occupy a position which is different from that of all subordinate ISPs. They benefit by being in a position where they do not have to rely on any paid interconnection such as transit in order to be able to offer complete connectivity. (Nonetheless, there are instances of some of the very largest networks buying transit on a very marginal basis, such as where they have inherited a transit arrangement as part of the acquisition of an ISP). The top level ISPs can only maintain their position by ensuring that they continue to have peering agreements with all other top-level networks. If they cannot secure or maintain such agreements, they will be unable to provide full coverage, and will be relegated to the second-tier status of limited peering ISPs.

(44) The obligation to provide full connectivity solely through peering agreements might appear to impose a heavy burden on top-level networks, as it suggests they need to seek out all new networks as they are set up, and peer

with them in order to continue to assure their customers full Internet connectivity. However, the bargaining power is in the hands of the top-level networks. This is because the right of access to the larger network is far more valuable to the customers of the smaller network than the equivalent rights in the reverse direction. Interconnection to a large network may give a small ISP the opportunity to offer its customers connections to thousands of sites, whereas the existing customers of the larger network gain only a relatively small marginal benefit in terms of access to perhaps no more than a few tens or hundreds of new sites. Consequently the larger network is in a position to determine the terms on which it will interconnect. In the ordinary course of events, a small new entrant ISP would be unlikely to obtain peering from a top level network, and would therefore have no choice but to become a transit customer of an existing top level network. In order to preserve their position, top-level networks need only peer with other similarly placed networks, and by doing so they can be reasonably confident that they will obtain access to all new entrant networks.

(45) Although in the early days of the Internet peering agreements were entered into fairly freely, larger networks are increasingly cautious about allowing smaller networks access on a settlement-free peering basis, as it allows the customers of the smaller network to 'free ride'. Consequently smaller ISPs seeking interconnection with larger ones, and particularly those who seek direct connection with the top-level networks, may well be asked to meet a series of conditions before peering will be considered. Peering applications may be refused, in which case the ISPs concerned will usually be invited to become customers rather than peers. They may well decide not to become direct customers of a top level network, but to buy services through a reseller. The difficulty for the smaller networks of obtaining peering with the top-level networks means that the number of ISPs who enjoy the status of top-level networks is kept relatively small. Thus the industry is structured with a hierarchy of ISPs with progressively larger and geographically more wide-ranging networks providing transit for smaller and more localised ISPs unable to deliver traffic on their own account.

(46) It should be noted that although the top-level networks perform a crucial carrier function, they are also all vertically integrated to a significant extent. Their customers include final users as well as resellers. Thus obtaining access to these top-level networks is important for dependent ISPs, not merely as a way of getting access to the relevant dependent networks, but also to get access to the direct customer base of the top level network.

(b) *Secondary peering ISPs*

(47) Between the extremes of the peering-only top level ISPs and the transit-only resellers, there is an intermediate category of ISPs who have some of their own peering agreements, but who may not have sufficiently comprehensive peering agreements to give adequate connectivity by these alone, and who supplement it by buying transit from at least one other top level network. These ISPs are referred to here as 'secondary peering' ISPs, and offer customers a mixture of resold transit and their own peering-based connectivity. Because of the necessity to buy transit, secondary peering agreements can only duplicate routes which could be reached anyway through the use of transit services offered by a top level network.

(48) An ISP may have secondary peering agreements for a variety of reasons. Some connections may be for convenience or cost-saving. For example, it may be sensible for two adjacent or overlapping ISPs to exchange their traffic directly, rather than sending it as transit over hundreds or thousands of extra kilometres through several intervening networks. However, there may be reasons why a direct local interconnection is a poor second best to the use of transit. This might be, for example, if one of the two parties to the link is unable or unwilling to provide the necessary financial investment or to maintain the link in an appropriate or reliable condition, or where

regulatory or other obstacles make it difficult to obtain physical facilities or permission for interconnection at reasonable cost, or indeed at any cost. Despite its apparent illogicality, it may be simpler and cheaper in such cases to send locally-destined traffic through a distant transit provider, notwithstanding the extra journey which the traffic has to make. This currently happens with much intra-European Internet traffic, a significant volume of which is actually transited through US-networks.

(49) Other secondary peering agreements may reflect historical circumstances which have now changed, for example where two networks previously comparable in size now show a strong imbalance, but they nonetheless maintain peering connections with one another. Inspection of data gathered during the course of enquiries suggests that there are a number of secondary peering ISPs who continue to peer with top-level networks but who do not appear to meet the technical network criteria currently demanded by those networks of new applicants for peering. The hostile public reaction which UUNet met in its 1997 attempt to end peering with a number of its secondary peering ISPs suggests that these issues are not determined entirely by economic considerations. [...](*). Secondary peering ISPs may find the possession of public peering agreements with some of the top-level networks useful as a marketing tool, even if, for technical and economic reasons, they find they have to rely largely on transit to deliver a service at the required speed, quality and reliability levels.

(50) In their Reply to the Statement of Objections the notifying parties took issue with this view of the Internet as a hierarchical structure. They argued that the Internet was originally conceived to be non-hierarchical in form, in order to avoid the strategic vulnerabilities associated with network architectures based on centralised and hierarchical switching and tiered structures. However, it was noted that these objectives pre-dated the Internet in its current commercial structure, and furthermore neither the present operation of the Internet, nor its future development, necessarily reflects the philosophy behind the original research project.

(v) **The economics of transit versus settlement-free peering**

(51) Although settlement-free peering is sometimes represented as a cost-free option (by comparison with paying for transit), this is not strictly correct. Each party to a peering agreement will incur the capital costs of installing the connection and then the service and maintenance costs of keeping the link in working order. Whether this is cheaper or more expensive than buying transit will depend on the circumstances of the ISP in question, and the price at which transit can be obtained.

(52) Once peered, each party to a settlement-free peering agreement will want to ensure that it is not disadvantaged by an imbalance in traffic flow across the peering interface. Unlike in the case of traditional settlement-based public switched telephony, where an imbalance in traffic is financially advantageous for the party receiving the net inflow, traffic received over a peering interface represents a cost to be set against subscriber income. In the short term, there is no financial incentive to accept a net imbalance of traffic. The rationale for a peering agreement is that each ISP assists each other in disposing of each other's traffic burden. The fact that network traffic is a cost- rather than a revenue-generating item is evidenced by various traffic management strategies practised by the larger networks, all of which attempt to minimise the amount of time which traffic from smaller peers (or responses to it) spends on their network. Larger networks can make it a condition of peering that the smaller network interconnect at not just one, but at multiple points so as to permit the larger to practice 'hot potato' or shortest-exit routing, under which the traffic is handed off to the smaller network in the shortest possible distance.

(53) Peering however also has benefits. In so far as imbalanced traffic flows may exist, neither side earns a margin from the other for the termination of any surplus one-way flows, but each side also avoids accounting, billing and collection costs. And although the costs of interconnection have to be borne, having even a

(*) Parts of this text have been edited to ensure that confidential information is not disclosed; those parts are enclosed in square brackets and marked with an asterisk

large number of peering agreements could be much cheaper than purchasing transit.

(54) Because an unbalanced peering arrangement is of considerably more benefit to the smaller of the two networks, larger ISPs have tended to become more cautious about the extent to which they permit small ISPs to 'free ride' by using the networks of larger ISPs without charge. The establishment of peering policies by larger ISPs has also been characterised as a way of keeping transit-paying customers as customers, by erecting obstacles in order to prevent them converting into fully-fledged top level ISPs in their own right. It should be noted that the declaration of a peering policy does not prevent an ISP from dealing with any requests as he thinks fit, notwithstanding whatever policy on peering might be announced.

(55) Buying transit also has benefits, however. It avoids up-front capital costs of facilities construction, and the risks associated with negotiating interconnection agreements. It may also make more sense to buy transit directly from a top-level network, with the attendant guarantees of quality, speed and reliability of service, rather than to rely on antiquated secondary peering connections.

(56) Quantifying the relative costs has proved difficult because it depends on the circumstances of the individual party concerned. For example, telephone operators with a relatively large installed base of fibre may well find the cost of buying transit disproportionate to what it would cost to hook up with top level ISPs through peering agreements.

(57) It might appear that, for an ISP which had to buy transit, the most efficient arrangement would be to use whatever secondary peering agreements it may have as much as possible, and to pass to the transit provider only that traffic which he is incapable of sending on his own peering interfaces. In theory this should allow him to purchase the minimum amount of transit. In practice, if the ISP has to incur relatively high (and unavoidable) costs for the transit arrangement based on the theoretical data-carrying of the installed connection rather than actual use, the secondary peering agreements may offer little that the transit connection did not already provide, and may have a symbolic rather than actual value.

B. MARKET DEFINITION

1. *Product markets*

(i) **Host to point of presence access services**

(58) The first and last link in the chain is the line between the host computers (or point of access in the case of a private network) and the nearest point of presence of his ISP. As was mentioned earlier, this connection is either made over the public switched network or by means of a private dedicated line. This connection is not normally supplied by the ISP, although it can be, if so requested by the client. In the case of dial-up access, the customer will usually rely on the services of a local public telephone operator. With dedicated access, there are a range of options, including self-provision, obtaining a leased line from a telephone company or other utility prepared to offer such a service, or perhaps from the ISP itself.

(59) The conditions of competition at this level are different from those operating at the ISP level or further upstream. There is nothing to distinguish the local telephone services which might be bought for the purposes of Internet from the telephone services which might be bought for any other form of local loop telephony. Dedicated access is simply the provision of a cable connection, and those in the market for the supply of this service might be telephone companies but equally any other undertaking who can lease out or develop the necessary capacity. No respondents to the Commission's enquiries suggested that any relevant markets at this level would be affected by the merger and the issue was not pursued further.

(ii) **Internet access services**

(60) It was argued initially by the parties that other forms of data transmission service are equally substitutable for Internet services. This view does not appear to be well founded. Customers purchasing an Internet access service do so in the expectation that it will permit them to reach other users connected to the Internet. The provision of specific end-user to end-user data transmission facilities using other data protocols

might well enable customers to reach a limited number of other customers using the same protocol, but it would not provide the permanent, unfettered access to the community of Internet users which is the main purpose of buying the service. Accordingly other forms of data transmission service would not be significantly substitutable.

(61) The ISP provides basic access in the form of such hardware, software, network configuration, customer support and billing services as are required to enable the customer to make use of his Internet access.

(iii) **Top level or universal Internet connectivity**

(62) The providers of such Internet access services could be vertically integrated to a greater or lesser extent, and might be top-level networks in their own right, secondary peering ISPs or resellers. The issue for the purposes of market definition is whether ISPs all compete against one another to provide the same connectivity services, or whether there are any distinct and narrower markets within the sector.

(63) In practice no ISP can afford to build up his connectivity offering incrementally. His customers will immediately expect the ISP to be able to send and receive messages to and from anywhere and everywhere on the Internet. The limitations on attempting to do this through bilateral peering arrangements have already been outlined, and are formidable (capital investment in backhaul, negotiation of thousands of individual interconnection agreements and risks of failure of negotiations, etc.). Connectivity therefore has to be obtained from someone who has complete reach directly or indirectly over all the Internet, at appropriate standards of quality, speed and reliability.

(64) The connectivity service offered by each ISP is unique, in the sense that no other ISP offers a product which is identical. Each one offers a blend of, on the one hand, direct access to their own directly connected customers and customers of subordinate networks, and on the other, interconnection with other ISPs' networks, their customers and subordinate networks. Interconnections may involve transit or peering. In general terms, the smaller the ISP the more likely it is to rely substantially or entirely on transit, and the larger it is, the more likely it is to rely on internal connections or peering. Hence the content and price of the product on offer from any given ISP will depend on factors such as the size of the ISP's network, and the precise nature of the relationships it has with other networks. The offerings might also be differentiated to some extent in terms of quality, as a network which routes messages in a way which requires many hops will not be able to offer the same standards as a network able to deliver messages with very few hops. In principle therefore, the offerings of one network can represent a substitute for the service offering of another, provided the two networks can offer equivalent service standards, but two networks which are widely differentiated in terms of service standards may well not be substitutes.

(65) The only organisations which are capable of delivering complete Internet connectivity entirely on their own account are the top level ISPs. This connectivity is referred to hereinafter as 'top level' or 'universal' Internet connectivity. Secondary peering ISPs may be able to deliver some of their own peering-based connectivity (or 'second-tier' connectivity), but have to supplement it through bought transit. Resellers can only supply resold connectivity, although depending on who it is bought from, it might be a combination of first and second tier connectivity.

(66) The products offered by the top-level networks are differentiated in that the connectivity is supplied entirely by peering agreements between those top-level networks or internally. If the top-level networks are in a market of their own, it must be demonstrated that neither the secondary peering ISPs nor the resellers are capable of significantly constraining the behaviour of the top-level networks and preventing them from acting independently.

(67) If the top-level networks increased the price of their Internet connectivity services by, say, 5 %, then in principle the cost base of resellers would be increased by the same amount, and that increase would have to be passed on to the customer. Therefore the pure resellers cannot provide a competitive constraint on the prices charged by the top level network.

(68) The position of secondary peering ISPs is rather different. Unlike pure resellers they are not entirely captive to the prices charged by the top-level networks. They have a collection of peering agreements, either with other similarly-placed ISPs or with some, but not all, of the top-level networks. These may offer some limited substitutability in terms of allowing them to access some sites without having to transit the networks of the top level ISPs, but there will be gaps in their coverage. The better the reach of the peering connections, the more likely it is that a secondary ISP might be able to provide coverage. For example, if there were five equally-sized top-level networks, a secondary peer with peering agreements with four of those networks is in a better position to exercise a constraint than an ISP with peering connections to only one of the five. In no case, however, can the second tier connectivity offered by a secondary peering ISP provide a service which is a sufficient substitute for the first tier connectivity provided by the top level network to be considered as part of the same market.

(69) Secondary peering ISPs who wanted to offer complete connectivity could not avoid continuing to buy some transit from the top-level networks, and their cost base is therefore captive to the extent that they continue to have to do so. There is no evidence that customers would accept a limited-access service as a substitute for a full service, and a price increase of say 5 to 10 % is unlikely to be sufficient to encourage switching. Applying the hypothetical monopolist test, if the top-level networks were to act as one unit, then there is no one capable of providing an adequate substitute service in response to price increases. If all top level ISPs were to increase their transit interconnection charges by say 5 %, the ISPs outside this group could still provide a competitive constraint to the extent that they were able to use their peering agreements with some of the top-level networks to avoid the impact of the increase in transit charges. However, if faced with such a challenge to their price increase strategy, the top-level networks could react by charging for any interconnection, whether described as peering or transit. If this were to happen the unequal bargaining power of the secondary peering ISPs would not permit them to offer an effective competitive response.

(70) In summary therefore, the relevant market on which the merging parties are active is the market for the provision of top level or 'universal' Internet connectivity, as explained above.

(iv) **Evolution of market definition**

(71) The concept of 'top level network' might not represent today's economic reality, in so far as some of the players apparently capable of functioning as top-level networks are in fact paying for some or all of their peering. Others may benefit from peering agreements which would no longer be entered into today, and therefore their status as top-level networks may be open to question. As a result, the numbers of firms actually capable of offering competitive constraints may be smaller than the concept of 'top-level networks' might imply.

(72) In the past few years there has been a substantial growth in traffic levels on the Internet. Large capacity upgrades have been required not so much in order to obtain competitive advantage, but simply in order to maintain an acceptable quality of service in terms of speed and reliability in the face of increasing usage and hence congestion. The problem is not only one of new users, but of new applications, such as for example video transmission, which are very demanding in terms of bandwidth usage. The capacities of the largest cables on the largest networks have increased substantially over a very short space of time. The top level connections which were once made over T1 cables with capacities, or speeds, of 1,544 Mbps (1 544 000 bits per second) are now made over DS3 or T3 (45 Mbps equivalent) and most of the large backbones will soon feature connections with speeds of OC-3 (155 Mbps) and even OC-12 (622 Mbps). Networks which have remained static in terms of technical and capacity development have fallen behind. Even if such non-developing networks were once capable of offering top level or universal Internet connectivity according to the standards of the time, they may not be able to do so today.

(73) Until a relatively short time ago, the possession of, for example, peering agreements at public NAPs with all other ISPs with a reasonable presence at such NAPs might well have guaranteed the ISP concerned the status of a top level network. However, as congestion at NAPs has increased, the largest providers have increasingly begun to form their own private peering arrangements at points away from the NAPs. While the largest providers continue to peer at NAPs, then the fact that they also choose to peer privately between themselves would not necessarily affect the market definition. However, if the smaller ISPs who currently peer only at the NAPs were refused settlement-free private peering by the largest networks, they would no longer be capable of acting as top-level networks, and would drop out of the market definition. Because this process is in its early stages, the market definition adopted here will not be narrowed to anticipate such future developments, but the fact that this is likely to happen should be borne in mind as a relevant factor when considering the market power of the parties.

(v) **The parties' response**

(74) In their Reply to the Statement of Objections and at the oral hearing, the parties challenged the proposition that the Internet had a hierarchical structure. They contended that any ISP could render ineffective a price increase by the hypothetical monopolist consisting of all top-level networks by diverting traffic through secondary peering agreements, and extending the reach of those agreements if necessary. Hence, according to the parties, any ISP could interconnect with any other ISP, and thus avoid the need to use the top-level networks to complete their connectivity.

(75) As third-party interveners pointed out, it is highly unlikely that such a move would make the price increase unprofitable. An ISP customer seeking top level or 'universal' Internet connectivity through the purchase of transit from the top-level networks could not avoid the price increase of a hypothetical monopolist by buying this transit from another source, as no other sources would be available. Attempting to avoid the price increase by developing networks of second peering connections (which in itself would be a pre-requisite to any of the second-tier ISPs offering transit) would be practically impossible and involve substantial transaction costs, because of the need to install circuit capacity either to private peering points or to public exchange facilities. Indeed, the report of the parties' own experts: 'Competition on the Internet: The impact of the MCI/WorldCom merger', in discussing the option of peering as against transit, acknowledges at Section 3.1 that '… maintaining large numbers of direct peering interconnections may be too costly. A small network may wish to have only a limited number of such direct interconnections, and achieve universal Internet connectivity through the purchase of transit from some other network.' Even for larger ISPs who are not top-level providers, such connections would not be cost-effective for the traffic levels involved, because a large number of links would have to be made, probably more than it was possible for any ISP to manage effectively. Moreover, each of the individual ISPs with whom connections would have to be made, that is, other ISPs who were not top-level networks, would each handle only very small proportions of total Internet traffic, (a third party estimated that no individual ISP outside the top level group would control more than 2 % of traffic) and the costs for any ISP of installing the necessary capacity links would exceed the cost of the 5 to 10 % increase in transit from the hypothetical monopolist. It was also pointed out that the establishment of such links would involve the coordination of large numbers of players, lead to technological inefficiencies, and take a very long time.

(76) In addition, however successful an ISP might be in establishing a network of secondary peering connections, it could not reach the directly connected customers of the hypothetical monopolist. Access to those customers is an essential element in establishing universal Internet connectivity. Any attempt to establish an alternative connectivity based on a network of secondary peering links which did not include the networks of the hypothetical monopolist could not provide universal Internet connectivity, and could not provide an

economic substitute for the connectivity provided by existing top-level networks.

(77) The parties themselves appear to recognise this, because they also argue that even if secondary peering were only a partial substitute, the use of secondary peering connections would diminish an ISP's dependence on the transit provided by the hypothetical monopolist and allow him to avoid the effects of a 5 to 10 % price increase. However, it was pointed out that the hypothetical monopolist could set transit prices that were not usage sensitive (in so far as they do not do so already), and thus reduce the incentive for ISPs to shift traffic away from the top level providers, thereby negating the effectiveness of secondary peering even as a partial and very limited substitute.

2. *Relevant geographic markets*

(i) **Corporate and traveller services**

(78) On two of the markets initially identified by the parties (corporate services and traveller services), the combined market shares of the parties would not have been sufficient to give rise to competition concerns, whether the markets were defined at the national level, or at any wider level. Accordingly, it is not necessary to discuss geographic market definition with respect to those markets.

(ii) **Carrier services**

(79) In the Unisource decision, the Commission stated that by their very nature, both supply of and demand for carrier services are at least cross-border regional. Geographic proximity between purchaser and supplier of switched transit capacity is hardly relevant for switched transit which carriers use either as a substitute for operating own international lines or to deal with peak traffic on such lines. Likewise, dedicated transit services offer cable- or satellite-based routing capacity across third countries. Finally, using hubbing services is an alternative to entering into an undetermined number of bilateral agreements with individual carriers. For carrier services the markets of relevance for the purposes of assessing the current operation are in Europe and transatlantically to the United States.

(iii) **Internet services**

(80) The geographic extent of the different markets for Internet services depends on which level is being looked at. Physical connection from the final user to the ISP, whether by dial-up or dedicated access, can only be provided locally, by a supplier active at the local level, and in any event is not usually part of the ISP's service offering. Such a connection could be provided by a local telephone company, or indeed by any other supplier of such cabling facilities. The geographic markets at this level are thus regional or national, depending on the scope of the supplier's cable network. However, since in Europe the parties are not strong in the provision of such local loop services, the definition of these precise geographic markets can be left open.

(81) The ISPs competing to provide Internet access services to final users may be operating on what are essentially regional, that is, sub-national, or national markets. Some ISPs may be small locally-based organisations. But larger corporate final users may look internationally for their choice of ISP, and ISPs who tend to deal with those types of clients may market their services internationally.

(82) The international nature of the Internet becomes more marked with larger ISPs, who often operate on a national or international level. Although the top-level networks which have emerged so far have their centres of operations in the United States of America, they are the only providers who can provide transit to all parts of the Internet. This can be contrasted with conventional voice telephony, where traditionally operators have tended to focus their activities in a particular territory, and to relay traffic which has to pass across that territory. The terms on which any ISP anywhere in the world can operate depend

upon the terms on which it can obtain transit directly or indirectly from these providers. They are in the event highly vertically integrated. For example, UUNet has retail level subsidiaries in many European countries. A rise in prices for access to the top-level networks would affect consumers everywhere in the world. There is thus effectively one global market.

(83) In their Reply to the Statement of Objections the parties argued that the geographic market definition was flawed, because ISPs did not necessarily have to obtain their connectivity from one of the group of top-level networks. However, the parties' geographical definition was closely linked to their views on product market definition, and is not consistent with the product market as defined for the purposes of this Decision.

C. COMPETITIVE ASSESSMENT

1. *Carrier services*

(84) The position regarding carrier services can be looked at in terms of European and transatlantic capacity.

(85) In Europe much of the capacity, some 95 % according to the parties' estimates, is held by incumbent telephone operators. Although WorldCom has been building city to city networks, MCI does not have a substantial presence as a capacity holder on this side of the Atlantic. No competition concerns therefore arise in this respect from the proposed transaction.

(86) In relation to transatlantic capacity, information provided by the parties suggests they would have a combined share of notional capacity holdings on the United States end of 23 %, making them the second biggest capacity holder behind AT&T (29 %). The position regarding capacity control will be altered when transatlantic cables such as Gemini (in which WorldCom is involved) comes on stream (expected in mid-1998), when there will be a notional increase in the proportion of available capacity held by WorldCom. However, plans are being drawn up for yet more cables, and as these come on stream, any advantage which WorldCom might temporarily hold by possession of capacity on its new cable is likely to be quickly eroded.

2. *Internet access services*

(87) The parties contended that there was substantial competition at the retail ISP level and that barriers to entry were low. This was not challenged by third parties who responded to requests for information. However, it was noted that those ISPs who competed against the downstream arm of vertically integrated providers were essentially resellers of connectivity provided by those suppliers further up the supply chain. The analysis therefore focused on those markets in which the parties were both active and in particular the market for top level or universal Internet connectivity.

3. *Top level or universal Internet connectivity*

(88) When asked to provide information on their activities in the Internet sector, the parties' initial estimates of market share were based on their contention that any ISP in possession of its own cable facilities constituted a backbone provider, and that since most ISPs possessed facilities of some description, they could be regarded as backbone providers. They estimated that the market size in 1997, based on extrapolation of estimated figures for the United States market in 1996 provided in a Frost & Sullivan report, would have been about USD 4 700 million, and that on this basis their revenues from basic Internet access services (stripping out value added services) would not have exceeded some 20 % of the total market.

(89) The Commission has difficulty in accepting this market definition or method of calculation of

market share. A definition which equates ISP with backbone provider seems unduly wide, as it blurs the distinction between a small locally-based reseller dealing with local clients, and the large multi-national top-level networks. The parties claimed it was impossible to provide market shares on any basis other than the one which they had provided, because of the absence of published data, as well as the definitional problems associated with identifying a backbone provider.

(90) It was noted however that, despite the claimed difficulties of definition, a number of commentators had sought to undertake market studies using such information or best estimates as they could procure. On that basis, the market position of the notifying parties was considerably stronger than would have been implied by the parties' own estimates, and suggested they might be able to control a considerable proportion of the Internet. These estimates, although based on different methodologies, all pointed towards the conclusion that the combination of the merging parties' networks would create a single entity with a very large market share.

(91) In the course of enquiries of customers and competitors, a number of concerns were expressed. For example, one firm which purchased connectivity from one of the merging parties stated that: '… The proposed merger would reduce this number (that is of credible alternative service providers) to three. Without reliable alternative sources of supply, customers such as (name of firm concerned) might become overly dependent on fewer suppliers, leading to loss of quality of service … and an upward pressure on prices.' Another firm active in the supply of Internet services stated that the merger 'risks creating an undesirable environment for the provision of Internet service in the common market in which the combined entities will have a dominant position.' A third firm said 'the combination of two of the world's Internet backbone leaders creates a dominant carrier which could significantly affect competition on the Internet backbone structure. Together the companies would control up to 55 % of the backbone Internet traffic'.

(92) In its submission to the Federal Communications Commission (FCC) of 13 March 1998, Sprint Corporation estimated that, based on survey data compiled by Boardwatch magazine, the combined WorldCom/MCI would have about 55 % of all connections after the merger. The Maloff Group report of October 1997 estimated that the combined entity would have 68 % of Internet revenue connecting over the WorldCom MCI backbones. Bell Atlantic's submission to the FCC summarised the market shares of the merging parties based on reports in the press at 60 %, and estimated combined shares at 58 % based on share of customer routes using routing tables. A submission to the FCC from the GTE group estimated a combined market share for the merging parties of 47 %, based on total bandwidth, as provided in Boardwatch magazine. All these estimates contrasted sharply with the parties' own estimates, based on revenue, of a market share of around 20 %.

(93) In their Reply to the Statement of Objections, the parties explained that [between 30 and 40 %](*) of the top 400 web sites were connected to MCI and another [between 40 and 50 %](*) to WorldCom. Out of the [between 30 and 40 %](*) connected to MCI, [between 5 and 15 %](*) are connected exclusively to MCI and another [between 0 and 10 %](*) use both WorldCom and MCI but no one else. Similarly, out of the [between 40 and 50 %](*) connected to WorldCom, [between 5 and 15 %](*) are exclusive to WorldCom and [between 0 and 10 %](*) use only MCI and WorldCom. This implies that [between 15 and 25 %](*) of the top 400 web sites would be connected exclusively to the merger entity. Assuming that all the remaining web sites were connected to at least three top level ISPs, WorldCom/MCI would have a share of this business of [between 35 and 45 %](*).

(94) Finally, the Chief Operating Officer of WorldCom, was quoted as saying that 'having a big network is a huge barrier to entry for competitors' ([9]).

(95) The absence of specific reporting obligations on ISPs in relation to Internet revenues, and the absence of consistent reporting standards for data which is produced, means that there is no reliable publicly available estimate of the size of

([9]) *The Washington Post*, 29 September 1997.

either the Internet sector as a whole or of any relevant sub-sector. There was also a divergence of views as to what should be the correct units for the measurement of market share and market power. The observations made by third parties suggested that there was no industry consensus on a preferred unit of measurement, but there was agreement that a reasonable picture might be produced by using more than one index, and a number of commentators thought that a combination of revenue and traffic flow might offer the best picture.

(96) Accordingly, the Commission undertook its own enquiries with the aim of collecting data that might enable a more accurate determination of market size and share, and in particular the share of the merging parties.

(i) **Possible methods of market share**

(97) Apart from revenue and traffic flow, discussed in more detail below, data was also collected on other possible measurement indices, such as aggregate capacity in interconnecting links, numbers of addresses reachable, numbers of points of presence, actual bandwidth used for traffic exchange, and considered whether any reasonable conclusions might be drawn on that basis.

(98) The size of installed capacity links (from customers to ISP, from ISPs to public and private peering points) might well provide an indication of the potential of a network in terms of performance, and also of size, on the assumption that capacity would not be purchased and installed unless there were some reasonable expectation of using it. The obtainable data were not sufficiently comprehensive to enable any firm conclusions to be reached on the basis of using capacity figures alone. However, the figures available on total aggregate capacity connections, that is the connections between the network and its customers, and with peers, whether public or private and transit suppliers, supported a picture whereby the merging parties would have […](*) of the market share of the top-level networks.

(99) As regards address spaces, it appeared that newer networks or customers might make greater use of mechanisms to limit the number of advertised route entries and addresses, and that higher numbers of advertised addresses might signify nothing more than a relative unmodernised network. Moreover it was not clear to what extent companies responding were presenting address numbers and route entries on the basis of what they could reach as a result of their overall connectivity (that is, including what they could reach by transit). In general it appeared that most networks considered themselves capable of delivering 100 % connectivity by one means or another, and the number of announced addresses was not a significant measure of network size or strength.

(100) As regards numbers of subscribers, one problem appeared to be the difficulty of identifying how many real users there were. For example, a network with a large proportion of corporate subscribers might register a low number of individual subscribers, but each company customer might have their own private internal network with many connected users. As a result, subscriber numbers were unlikely to give a highly accurate reflection of the strength of a network. There were similar definitional problems in attempting to use data based on numbers of web sites. Different web sites could have widely varying degrees of importance, which would not be reflected in a simple tally count. Accordingly no attempt was made to use these data in order to draw conclusions.

(101) On POPs (points of presence), it was suggested that, in principle at least, there might be a correlation between network size and the number of POPs, because a backbone provider would deploy a POP when it had a critical mass of customers to reach. A competitor for example estimated that the merged entity would have some 48 % of the total points of presence in the United States of America. However the

number of POPs was regarded by some commentators as one of the less reliable methods of establishing network size. The numbers would appear to depend to some extent on system architecture rather than network size. Moreover, although the number of POPs may equate to the number of subscribers in a given region, the number of subscribers may not itself be an accurate indication of network size (for example, one network might have large volumes of low-usage subscribers and many POPs, whilst another might have comparatively few high-usage subscribers and a small number of POPs).

(ii) **Identification of top-level networks**

(102) Many of those consulted during the course of enquiries mentioned the same four ISPs (the WorldCom group, MCI, Sprint, and the GTE/BBN group, 'the big four') as having a position stronger than all the others. However, analysis of data showing revenues from Internet access, as well as of traffic flows (which is considered in more detail below) did not suggest a very clear dividing line between the smaller members of the four and the next largest ISPs said to be in the next category. Accordingly peering agreements among the key players were examined to determine who might be regarded as top level providers. What was being looked for was a set of peering agreements which might equip the holder with 100 % settlement-free connectivity across the Internet. The analysis was complicated by the fact that there was no single list of NAPs at which any given ISP had to peer in order to obtain comprehensive coverage. Thus each ISP might possess its own unique set of peering arrangements and yet be capable of establishing complete connectivity over the entire Internet. An additional difficulty was that many of the ISPs whose collection of peering agreements suggested they were capable of operating as top-level networks were found to be buyers of transit, and it was not clear whether the transit was essential (because, for example, the peering connections, although comprehensive on paper, were inadequate in practice) or for convenience.

(103) As a point of departure therefore, the analytical approach started from the proposition that any top level network would necessarily have to peer, at the minimum, with at least the big four, which were capable of supplying universal interconnectivity without recourse to transit. Failure on the part of an ISP to peer with at least these four as a minimum would imply a substantial absence in their coverage of the Internet as a whole. It is possible that the number of participants who are true top-level networks is actually smaller than the field of those who peer with all four, as each additional peer, while of course peering with the original four, may not peer with each and every other peer who also peers with the big four. To that extent, they may not have complete ability to cover the entire Internet on a settlement-free basis. However, for the purposes of assessment it was assumed that anyone with peering connections to all four of the big four would be considered a desirable peer by anyone else who had the same connections. It should be noted that the available data did not confirm whether such ISPs were directly connected with one another. Arguably, failure to have that complete range of interconnections with one another as well as with the big four would rule out such players as top level ISPs. It was assumed however for the purposes of the analysis that such peering inter-connections already existed, or could be very quickly made if for any reason they did not already exist. This assumption runs in the parties' favour by widening the field of market participants.

(iii) **Estimates of market size and share based on revenue figures**

(104) On the basis of the above, a total of 16 ISPs would have fallen within the definition of a top level network. (A further three very small ISPs, which do not peer with WorldCom's principal Internet subsidiary UUNet, but with some smaller subsidiaries, might be included, but the effect of this is marginal.) As to the total size of the market, the information available was not comprehensive, and estimates had to be made in respect of the turnover of three firms for which accurate figures were not available. The revenue for each of the three firms concerned was estimated at USD 30 million each, which was believed to be a considerable over-estimate of their actual revenues. On this basis the total market size for 1997 would have been in the order of USD 2 300 million. WorldCom's share

would have been [between 35 and 45 %](*), and MCI would have added some [between 5 and 15 %](*), giving the combined group some [between 45 and 55 %](*) of the market. Its two nearest competitors would have enjoyed a combined market share of [between 15 and 25 %](*).

(105) Although the parties repeatedly stressed their belief that revenue figures were the only reliable indicator of market share in this area, many other competitors pointed to the possible dangers of over-reliance on revenue data alone. Although figures based on revenues from basic Internet access were used wherever possible, the companies concerned are under no obligations as regards reporting standards or even disclosure of data. Consequently, it was necessary to treat the figures with caution.

(106) Firms which are peered with up to three of the main providers have little claim to be regarded as top-level networks, as a failure to peer with one of the four indicates a substantial shortfall in their ability to provide Internet connectivity. However, for the purpose of undertaking a sensitivity analysis, market share estimates were made to see whether the addition of these players would cause any significant alteration to the figures. On such a basis (which it must be stressed is extremely conservative) combined market shares of over 40 % in revenue terms were still recorded for the notifying parties. Consideration was given to whether the definition of a top level network might be widened still further to include firms which peered with only two of the four largest networks. However, it was felt that at this level the gaps in coverage were so large that the ISP concerned could not realistically be regarded as a top level network on any reasonable assumption.

(iv) **Traffic flow**

(107) A number of commentators suggested traffic flow was an inherently better measure than revenue, although some said the figures might be affected by sudden surges, such as short-term interest in a particular web site.

(108) There are no statistics directly available on the overall traffic volumes sent or received by ISPs. Accordingly a 'bottom-up' approach had to be adopted in order to calculate market shares based on traffic. This requires the identification of market participants, and to add their respective measurements of traffic flowing through their networks in order to obtain the size of the market. However it could not be established with certainty that all measurements of traffic flow were made on an entirely consistent basis by the market participants concerned. An alternative way to calculate the traffic-based market shares had therefore to be devised.

(109) The total traffic flow of any given ISP includes the traffic exchanged with other identified ISPs and its internal traffic (that is, the traffic between customers exchanged over its network). The market shares can be calculated using traffic ratios without necessarily having to have as an input the total Internet traffic flow, according to the following methodology. The ratio of the market share of network A to the market share of network B is equal to the ratio of total traffic flowing through network A to total traffic flowing through network B If both terms of this ratio are divided by the total traffic exchanged between networks A and B, it follows that the ratio of market share of network A to the market share of network B is equal to the ratio of the relative share of network A in the total traffic flowing through network B to the relative share of network B in the total traffic flowing through backbone A. Therefore the market shares can be calculated on the basis of the relative shares of each network in the total traffic going through each network. This prevents the market share calculation being biased by possible differences in measurement methodologies. On this basis, the respective market shares for the WorldCom group and MCI are in the ratio […](*).

(110) When applying this methodology to a hypothetical market comprising GTE, MCI, Sprint and the WorldCom group, their respective market shares would leave the WorldCom group with [between 50 and 60 %](*) of such a market, with MCI bringing an additional [between 15 and 25 %](*), or [between 75 and 85 %](*) in total.

(111) It was possible to gather comprehensive traffic flow data only from a limited number of the larger networks. It was not possible to calculate market shares definitively because a breakdown of traffic split out according to individual peers was only available from the WorldCom group for private peers. However, the total traffic sent and received by the big four to other ISPs peering with them is known. For the purposes of this calculation, the universe of ISPs was drawn to cover all ISPs who peer with at least one of the four largest networks. This is a generous assumption because the relevant market analysis suggests that the market cannot be wider than the 16 top-level networks who peer with all four largest networks, and is almost certainly narrower.

(112) In order to calculate the market share of the other 12 networks, it was necessary to make certain assumptions. The general assumption was that the traffic flowing through a given network was a reflection of the sizes of the networks to which it was exchanged. Thus if Network A sends 10 % to Network B and 20 % to Network C, Network B is assumed to be half the size of Network C. It seems reasonable to make such an assumption for the largest networks, because they have such a high proportion of total Internet traffic flowing on them that they can be taken as being representative of Internet traffic as a whole. Applying this to the WorldCom group and MCI, […](*) of WorldCom's traffic was exchanged with MCI, and […](*) was exchanged with the other 12 networks. Therefore, the ratio of the size of MCI's network to the size of the other 12 networks in total should be […](*).

(113) Under these assumptions, the market shares would give the WorldCom group some [between 30 and 40 %](*), with MCI bringing an additional [between 10 and 20 %](*) and no competitor having more than [between 5 and 15 %](*). The combined market shares of MCI and the WorldCom group would then be [between 42 and 52 %](*).

(v) **Conclusions on calculation of market share**

(114) The calculation methodology discussed above for market sizing and for share based on revenue and traffic flow has been designed on a conservative basis, to be as generous as possible to the parties within reasonable limits, and thus is likely to understate market share. Nonetheless, even on this basis, there is little doubt that the combined entity would hold over 50 % of the market, however widely defined. The combined network would be [significantly larger than](*) the size of its nearest competitor (Sprint) on either revenue or traffic flow, bearing in mind that the next competitor, the GTE group, is about half the size of Sprint.

(vi) **The parties' response**

(115) The parties objected that commercial confidentiality constraints imposed by competitors on the information supplied by them to the Commission made it impossible for them to determine who were the other 12 who were active in the market, and thus whether market share figures might be significantly affected if other players were added. As has been noted, the analytical approach was essentially a conservative one, and designed to give the parties the benefit of the doubt, if there were any doubt, as to who might be considered to have the status of a top level network. On this point, one of the interveners at the oral hearing, Sprint, took a more restrictive view on the definition of the market and questioned whether some among the 12 networks might not have access to a large number of geographically dispersed locations or own or lease high speed facilities, and thus might not be accepted by competitors as capable of fulfilling Sprint's definition of a top level backbone provider. Another competitor, GTE, pointed out that including additional traffic would not change the size relationship between the largest backbones and that, in its estimation, classifying 50 companies as falling within the relevant market definition would lower the MCI WorldCom share by only 5 percentage points. These assessments supported the view that the identity of the 16 was not critical.

(116) In addition, the parties objected to the traffic calculation methodology used by the Commission. In particular, they questioned two assumptions which they saw as underlying the Commission's methodology, namely that traffic was uniformly distributed among […](*), and that there is no significant diversion of traffic caused by the interconnection among networks below the layer of top-level networks. Furthermore, the parties asserted that the traffic inputs provided to the Commission might not have been on a comparable basis and that, as a result, the parties' combined market share might have been overstated. The Commission for its part does not necessarily accept that the

assumptions suggested by the parties were implicit in the calculation methodology, nor what level of significance they would have to the extent that they were present. It also observes that: the parties, throughout the proceedings, had argued that revenue was the only appropriate method of measurement; all interested parties had been consulted about the form of the relevant data requests in order so far as possible to make the figures supplied comparable; and while questioning the Commission's methodology, the parties did not have any alternative to propose.

4. *Impact of merger and competition*

(117) The combination of the Internet backbone networks of WorldCom and MCI would create a network of such absolute and relative size that the combined entity could behave to an appreciable extent independently of its competitors and customers. This will impact on consumers in Europe as much as on any other consumers. WorldCom's principal Internet subsidiary, UUNet, already has a very substantial size by comparison with its competitors. The fact that it is close to achieving dominance may be inferred by its decision in early 1997 to attempt (an attempt which ultimately failed) unilaterally to cease peering with a number of its existing peers. Since that time WorldCom has already gained additional market power by the acquisition of ANS and CNS. As a result of the union with MCI, there can be little doubt that the critical mass would be achieved for acting independently of competitors.

(118) The strength and size of MCI WorldCom's networks would enable it to pursue various stratagems to reinforce its market position. These could follow two broad approaches as outlined below. One would be to raise rivals' costs, and the other would be to price selectively to attract customers away from competing networks.

(119) MCI WorldCom would control market entry by denial of new peering requests, foreclosure or the threat of foreclosure of peering agreements, and/or their replacement with paid interconnection. A prospective ISP who sought to achieve connectivity with all top-level networks would obviously need the consent of MCI WorldCom. But at present, even with the presence in the market of a group with the size of WorldCom, an incumbent's ability to deny peering requests to a suitably qualified candidate is constrained by competitive forces. Any incumbent who denies peering to such a candidate cannot assume that the prospective peer will buy transit from him instead. Alternatively the disappointed ISP might become a customer of a competing network; in which case the refusing ISP will have contributed to the enhancement of the market power of one of its competitors. If the merger goes ahead however, because of the strength of its bargaining position, the possible adverse consequences to MCI WorldCom of declining a peering request would be substantially reduced, if not entirely eliminated. Disappointed applicants would be obliged to purchase transit in order to reach the MCI WorldCom network, thereby putting them at a cost and quality disadvantage.

(120) MCI WorldCom would be able to act independently of competitors by raising their costs and decreasing the quality of their service offerings. Competitors with existing peering relations with MCI WorldCom would know that their ability to continue to operate in the marketplace depended on their being able to continue offering their customers connectivity to the MCI WorldCom network. If for any reason the quality or the cost basis of the connection to the MCI WorldCom network were to change in an adverse way, the customers on those competitors' networks could well migrate to MCI WorldCom, and new customers might be deterred from going to anyone other than MCI WorldCom. Competitors would have to live with this threat and behave in a way which avoided disconnection or degrading of connection by MCI WorldCom. This might extend, for example, to allowing MCI WorldCom to have a say on to whom its competitors should grant transit or peering, and on what terms. In this way MCI WorldCom would be in effective control of the market.

(121) If a competitor wished to peer (or to continue peering), MCI WorldCom could control the quality of his service offering by its decisions on the management of the link. MCI WorldCom could degrade the offering of competitors, for example, by deciding not to upgrade the capacity at private peering points. Although this

would degrade the quality of service for both MCI WorldCom and the competitor concerned, the competitor would be hurt to a greater extent, as his customers would lose connectivity to a larger portion of the Internet than MCI WorldCom's customers. In proportional terms, the percentage of traffic affected by such a strategy would be higher for the smaller network. It should be added that MCI WorldCom's chances of implementing such a strategy might well be improved by picking off customers and competitors one by one, rather than attempting to take on the rest of the market in one step.

(122) The growth in Internet traffic has been such that MCI WorldCom could implement this degradation strategy without needing to make any conscious effort: it would suffice for it simply to focus on the development of its own network rather than upgrading the links with competitors. By opening up such a quality differential between itself and its competitors, it would be well placed to persuade any prospective new customers for Internet service to ignore the offerings of its rivals. As the size of the MCI WorldCom network grows, its power to disadvantage competitors in this way will become correspondingly greater.

(123) As MCI WorldCom grew larger, it would be in a position to take action to reduce the independence of incumbent competitors by changing the nature of the interconnection arrangements with them (or merely threatening to do so), to oblige them to pay for access to its network (either paid peering or transit) whilst offering no such payment in reverse. And in so far as competitors had no choice but to accept such a change in terms, MCI WorldCom would gain control over an important part of its rivals' costs and be in a position to influence the quality of their service offering. It could influence their cost position by charging prices for paid peering or transit that were designed to prevent its 'customers' (formerly competitors) from being able to offer prices competitive with those on offer from MCI WorldCom itself.

(124) MCI WorldCom could also behave independently of its customers, that is those ISPs selling Internet connectivity to final consumers, and business or residential customers buying dedicated or dial up access to the Internet. These customers depend ultimately on the provision of the connectivity offered by top-level networks. They will have no choice but to connect directly or indirectly to the dominant provider of these services, as it is only such a provider that can guarantee reliable access to all parts of the Internet. To the extent that MCI WorldCom is already active in this market, it could attempt to leverage its position there to gain a dominant position downstream. It could do this because of the inability of other top-level networks to offer a genuine competitive constraint, and because of the influence and control it has over the cost base of resellers active downstream.

(i) **Multi-homing as an alternative**

(125) In response to these arguments the parties argued that the ability to leverage a dominant position downstream was limited by the fact that many ISP as well as the more powerful customers — such as owners of web sites — were 'multi-homed', that is, they bought transit from more than one provider, and could easily switch traffic to the other if one of the providers attempted to abuse a strong market position. This was challenged by interveners at the oral hearing. It ignored the fact that many of the currently multi-homed customers were multi-homed to MCI and WorldCom, rather than, for example, to one of the merging parties and a third party; for this group the merger would remove their current freedom of choice. It was also said that multi-homing was not simple, because it required the operation of a particular protocol known as the BGP4 protocol, nor cheap, because it involved the expense of two transit connections where competitors might be paying for only one. In any event, a dominant network could impede multi-homing by a variety of tactics, including: a refusal to deal with multi-homing customers; degradation of connection to such customers or refusal to offer BGP4; or simply offering

volume discounts which would favour higher usage single-homed customers.

(126) Because of the specific features of network competition and the existence of network externalities which make it valuable for customers to have access to the largest network, MCI WorldCom's position can hardly be challenged once it has obtained a dominant position. The more its network grows, the less need it has to interconnect with competitors and the more need they have to interconnect with the merged entity. Furthermore, the larger its network becomes, the greater is its ability to control a significant element of the costs of any new entrant. It can achieve this by denying such entrants the opportunity to peer and insisting that they remain as customers and pay a margin accordingly for all the services they want to offer. The merger could thus have the effect of raising entry barriers still higher. Indeed, it could be argued that, as a result of the merger, the MCI WorldCom network would constitute, either immediately or in a relatively short time thereafter, an essential facility, to which all other ISPs would have no choice but to interconnect (directly or indirectly) in order to offer a credible Internet access service.

(ii) **Absence of competitive constraints**

(127) The first reaction of competitors, both actual and potential, to the enhanced market power of the largest network also needs to be considered. The first reaction of current competitors might be to try to attract more traffic. They could do this either by trying to poach existing customers away from the merged entity, or by enhancing their capacity in the hope of offering a technically superior service. The difficulty in persuading MCI WorldCom's customers to move is that those customers are already attached to the largest network, where they enjoy very direct access to that network's direct customer base. If they move to another network, they could only access MCI WorldCom direct customers through indirect means such as their new transit provider's peering agreements, and the number of customers that they could directly access on their new network would be smaller. Moreover, the general quality of their service offering would be lower because messages must pass through more hops to reach the largest network. And any such efforts to poach customers would not, of course, pass unnoticed by MCI WorldCom, who could make any such move unattractive to its existing customers by threatening to degrade (or not to upgrade) the peering connections with its ex-customer's new transit provider(s), or by relegating competing networks to the status of paid peer, or customer of MCI/WorldCom.

(128) It might be argued that MCI WorldCom might be faced by a concerted response from competing networks sufficient to prevent it from exercising its market power. However, MCI WorldCom can react by implementing a predatory strategy on an incremental basis, by which it challenges other competing networks in succession, starting with the smallest and weakest. For each of the competing networks, an attack on another competitor may benefit them in the short term to the extent that they can hope to pick up some (but probably not all) of that network's departing transit customers. They may calculate that their interests are best served by not behaving in a way which is likely to bring retaliatory action upon themselves.

(iii) **Potential competitors**

(129) In terms of potential competitors, the barriers faced by anyone attempting to enter as a top level network would be raised still further. Apart from the costs of network construction faced by anyone wishing to enter directly as a top level ISP, the aspiring entrant would almost certainly be refused peering by the incumbents because of inadequate customer, and hence traffic, base. As for an ISP who wishes to move from transit buyer to top level ISP, while there is competition among the top-level networks

there are certain limitations on how far any single network can go in refusing peering to another network which is large enough to constitute a potential competitor. It cannot assume that it will earn transit revenue from an applicant to whom it has refused peering. In turning down a request for peering from such an applicant, it risks enhancing the power of a competing network from whom the applicant buys transit, or of finding that it is the only one of the top-level networks which is not prepared to grant peering, and it may find the new network can exercise a disconnection strategy in reverse. But once one network becomes overly powerful, it can prevent potential competitors from assuming the status of top-level networks by making sure that the prices at which it supplies transit are kept high enough to prevent the new entrant from building sufficient market share. It can also prevent its competitors from granting peering rights by exercising the threat of disconnection or degradation against them.

(130) It has been suggested that new competitors at the top level might emerge, for example, by the collective joining of forces of ISPs in Europe. However, such ISPs would be no different from any other potential entrant, because they could not afford to do without connectivity obtained from the existing top level ISPs. And the top level ISPs are likely to be equally active in attracting new customers. In this sense the existing incumbents benefit from a substantial 'first mover' advantage. The obstacles faced by a European ISP attempting to enter as a top level network are likely therefore to be substantially the same as those faced by any other ISP, no matter where they are located in the world.

(131) The merger might well create a 'snowball effect', in that MCI WorldCom would be better placed than any of its competitors to capture future growth through new customers, because of the attractions for any new customer of direct connection with the largest network, and the relative unattractiveness of competitors' offerings owing to the threat of disconnection or degradation of peering which MCI WorldCom's competitors must constantly live under. As a result, the merger might provide MCI WorldCom with the opportunity to enlarge its market share still further.

(iv) **Customers' reaction**

(132) As to the customers' reaction, customers could try to counteract such a strategy by moving to the other networks to counterbalance the power of MCI WorldCom. In principle they might see this as the logical response to the market power now exercised by the dominant MCI WorldCom entity. But unless the customers can act as a unit (and there is no evidence that the customer base is sufficiently concentrated to permit this) no individual customer may want to take the risk of moving to obtain a possibly inferior service without having any assurance that a sufficient number of other customers would take the same step. They are unlikely to feel that it is worth taking the risk.

(133) In their reply to the Statement of Objections and subsequently at the oral hearing, the notifying parties laid considerable stress on the rapid growth of the Internet as a factor in limiting the ability of existing players to exercise dominance. However, the entry, for example, of large numbers of reseller ISPs operating at the retail level, but who still need to rely on an existing top level network for top level or universal Internet connectivity, will not be able to constrain the competitive behaviour of the parties any better than can any of the existing resellers.

(134) At the oral hearing, an intervener stressed the need to avoid the error of assuming that growth could counter market dominance. Indeed, the incumbents rather than newcomers could well be the best placed to capture future growth. For example, the parties pointed to the emergence of new competitors who were engaged in laying substantial fibre networks and could therefore offer a competitive counter-force. However, entry as a top level ISP requires not only physical facilities, but also a customer base and hence traffic flow and thus access to peering interconnection. A dominant network which refused to provide peering could effectively prevent a new entrant from operating as a top level network. […](*).

(135) It follows from the above that the notified concentration, if not altered, would lead to the creation of a dominant position in the market for the provision of top level or universal Internet connectivity.

VII. UNDERTAKINGS SUBMITTED BY THE PARTIES

(136) In order to try to resolve the issues raised by the Commission about the likely impact on competition of the proposed merger, the parties have offered to enter into the following commitments ('the undertakings'):

'In order to achieve clearance of the merger, the notifying parties have agreed to divest the entire Internet business of MCI and, accordingly, make the following undertakings:

I. Divestment of MCI's Internet business

1. MCI will divest MCI's Internet businesses and services relating to access to the public interconnected network of networks known as the "Internet" and certain related services (collectively, the "iMCI business") as an operating entity. The iMCI business, the entirety of which will be transferred to a single purchaser ("the purchaser"), includes:

   (a) iMCI's wholesale worldwide dedicated Internet access business (i.e. dedicated access to the Internet sold to Internet Service Providers (ISPs) who are in the business of providing Internet access to others);

   (b) iMCI's retail dedicated Internet access business (i.e. dedicated access to the Internet sold to end users);

   (c) iMCI's (i) consumer dial-up Internet access business and/or (ii) business dial-up Internet access business and (if either or both of the dial-up Internet access businesses are transferred) electronic mail servers for electronic mail used for iMCI's dial access customers (unless the purchaser elects not to acquire either such business);

   (d) iMCI's web hosting services;

   (e) iMCI's real broadcast network services; and

   (f) iMCI's managed firewall services.

   The following services, which are not a part of the iMCI business will not be included: (i) vBNS private research network, (ii) the Internet II network research and construction project for the United States Government, and (iii) virtual private network data services, including Extranets and Intranets.

2. The iMCI business will be transferred to a separate wholly-owned subsidiary of MCI (NewCo) prior to its transfer to the purchaser. NewCo will be an independent business with 100 % of the Internet traffic and 100 % of the Internet revenues of the iMCI business:

   (a) all relevant MCI routers, servers, ATM switches, modems, ports and other equipment and related Internet network infrastructure necessary to operate the iMCI business will be transferred to NewCo, including without limitation, associated Internet Protocol (IP) addresses, autonomous system numbers and numbering schemes for network operations. Additional assets include related connectivity components, including racks to support the equipment sold and cables between such elements, customer lists and historical data for all customers.

   All domain name and authentication servers for dedicated and dial-up Internet access, network news servers, Mbone servers, ISICS performance

monitoring servers, web hosting servers and servers for the operation of the real broadcast network, servers for the iMCI dial network and related engineering test equipment will be transferred to the purchaser;

(b) subject to the following, all MCI's contracts with wholesale and retail customers for the provision of Internet access and all MCI's Internet web hosting and managed firewall service contracts will be assigned to NewCo as follows: 1. MCI will assign […](*) of the Internet dial-up and assignable web hosting and managed firewall contracts at closing; and 2. all other contracts which can be assigned without the customer's consent will be assigned at closing. For those contracts which cannot be assigned without the customer's consent:

(i) MCI and WorldCom will use their best efforts to obtain the customer's consent […](*) and cause all such contracts to be transferred to the purchaser […](*);

(ii) MCI and WorldCom will, in any event, take whatever steps are required to ensure that iMCI contracts representing […](*) of iMCI combined retail dedicated access and web hosting revenues and […](*) of the remaining iMCI business revenues at closing are transferred to the purchaser […](*); and

(iii) for any contract where the consent of the customer to assignment cannot be obtained despite the best efforts of MCI and WorldCom, MCI/WorldCom will remain the contracting party, but […](*) of the Internet traffic will remain on the transferred iMCI network for the duration of that contract, and MCI will pass through to the purchaser […](*) of the Internet revenues received under that contract;

(iv) MCI and WorldCom will agree with the purchaser that the purchaser shall have the right to appoint an independent auditor, at MCI WorldCom's expense, to review relevant documents and records of MCI and WorldCom relating to compliance with the terms of this paragraph 2(b);

(c) the purchaser will benefit from the use of intellectual property rights necessary for the operation of the transferred business (with the exception of security software) and will also benefit from all other assignable permits/authorisations held by MCI necessary for the iMCI business. MCI will provide security services to the purchaser for a period agreed upon between MCI and the purchaser.

3. MCI will transfer to the purchaser all existing peering arrangements, including the peering agreement with WorldCom. WorldCom agrees not to terminate such peering arrangement for a period of five years from the closing date (save for material unremedied default). The peering agreement between MCI/WorldCom and the purchaser will provide for ongoing mutual obligations to maintain efficient and high quality interconnection between the networks, including, but not limited to, reasonably required bandwidth upgrades, added connections and added interconnection locations. […](*).

4. Except for Internet customers of WorldCom as at the closing date, MCI/WorldCom will not solicit or contract to provide dedicated Internet access services:

(a) to wholesale dedicated Internet access customers (i.e. ISPs) for a period of at least 24 months post closing;

(b) to retail dedicated Internet access customers whose contracts are assigned to the purchaser for a period of at least 18 months post closing;

(c) to retail dedicated Internet access customers whose contracts are not assigned to the purchaser for a period

of at least 18 months post closing, or until after the termination of such contract, whichever is later.

MCI will negotiate in good faith with the purchaser an appropriate non-compete agreement with respect to the web hosting and managed firewall services. MCI and WorldCom will agree not to take any steps to cause the transfer of Internet services business from iMCI to WorldCom, or to multi-home such business on WorldCom networks beyond the ordinary course of business, prior to closing.

5. As part of the transaction:

(a) MCI will transfer to NewCo all necessary employees to support the iMCI business being transferred. MCI and the purchaser will mutually agree upon the employees who will be transferred with the iMCI business and MCI will provide the purchaser with a list of employees classified by function relating to such business. Employee transfers will include engineers, operations support personnel, and sales and marketing as well as support staff;

(b) MCI and WorldCom agree not to hire employees transferred to the purchaser for a period of […](*) post closing and not to solicit the employees transferred to the purchaser for a period of […](*) post closing;

(c) MCI will make available all other necessary support arrangements to fulfil existing contractual obligations of the iMCI business — and to accommodate growth of that business — together with, where possible, the benefit of existing MCI maintenance agreements and warranties;

(d) MCI agrees that until the closing date the iMCI business shall be operated in the ordinary course consistent with past practice, including without limitation, the commercially reasonable solicitation and retention of Internet service customers and network backbone development;

(e) MCI will license the purchaser to identify the acquired backbone assets and/or the acquired business as "formerly the InternetMCI backbone network" and/or "formerly the iMCI business" (the specifics of which shall be negotiated with the purchaser) for a period of […](*); and

(f) MCI will enter into contractual arrangements to provide 1. basic transmission service for the Internet business being transferred and 2. international private lines for the contracts being transferred.

II. Timing

6. The sale is subject to and is intended to close prior to, or contemporaneously with, the closing of the merger between MCI and WorldCom. The terms of the sale are subject to all necessary regulatory approvals and the identity of the purchaser is subject to the approval of the United States Department of Justice and the Commission of the European Communities.

III. The sale of the iMCI business by the purchaser

7. […](*).

IV. Supporting agreements

8. At the option of the purchaser, MCI and purchaser will enter into the following supporting agreements in order to give effect to the transaction. Each of these contracts will be for a transitional period ([…])(*) and a follow-up period ([…])(*). [and will be at generally favourable rates](*).

(a) a Master Services Agreement, setting out the prices at which MCI will provide services to the purchaser to support the iMCI business being transferred. The Master Services Agreement will include:

(i) a Collocation Agreement, having a term of up to […](*), under which MCI will provide sufficient space at MCI locations for the operation of those assets being transferred to the purchaser;

(ii) a Network Service Agreement, having a term of up to […](*), pursuant to which the purchaser may obtain from MCI sufficient transport capacity for use in providing Internet services; and

(iii) Local Access Agreements, of up to […](*), whereby the purchaser will obtain local access to the Internet backbone;

(b) other contracts, having a maximum term of up to […](*), supporting the maintenance, operation, and provisioning of services and management of the network for the iMCI business customers.

Further details of these agreements will be negotiated between the parties.

9. The provisions of these undertakings contain the minimum protection that will be afforded by MCI/WorldCom to the purchaser.

V. **Implementation**

10. At any time after a period of […](*) has elapsed since the adoption of this Decision, the Commission shall have power to require the notifying parties to appoint a trustee in accordance with the provisions of paragraph 11 to exercise the functions set out in paragraphs 13 and 14.

11. (a) If the Commission decides to exercise the powers referred to in paragraph 10, it shall request the parties to propose to the Commission, within seven days of the parties receiving notification of such request, the names of at least two institutions, independent from either of the parties, and either of whom the parties consider appropriate to be appointed as Trustee.

(b) The Commission shall have the discretion to approve or reject one or both of the names submitted. If only one name is approved, the parties shall appoint the institution concerned as trustee. If more than one name is approved, the parties shall be free to choose the trustee to be appointed from among the names approved.

(c) If all the names submitted are rejected, the parties will submit the names of at least two further such institutions ("the further names") within seven days of being informed of the rejection. If only one further name is approved by the Commission, the parties shall appoint the institution concerned as trustee. If more than one further name is approved, the parties shall be free to choose the trustee to be appointed from among the names approved.

(d) If all further names are rejected by the Commission, the Commission shall nominate a trustee to be appointed by the parties.

12. As soon as the Commission has given approval to one or more names submitted, or nominated a trustee, the parties shall appoint the trustee concerned within seven days thereafter.

13. The trustee's mandate shall include the following functions:

(a) to monitor the parties' maintenance of the viability and market value of the assets and business activities to be divested in accordance with the undertakings, and that the assets and activities concerned are operated on an independent arms' length basis consistent with their status, until their divestment to the purchaser;

(b) to monitor the satisfactory discharge by the parties of the obligations entered into by the parties in these undertakings. In particular the trustee shall

(i) monitor and advise the Commission as to the adequacy of the procedure for selecting the purchaser and as to the conduct of the negotiations;

(ii) monitor and advise the Commission as to whether the agreements with the purchaser will properly provide for the divestiture of the relevant assets and business activities as provided for in the undertakings;

(c) to provide written reports ("the trustee reports") to the Commission on progress with the discharge of the trustee's mandate, identifying any

respects in which he has been unable to discharge his mandate. Such reports shall be provided at regular monthly intervals commencing one month after the date of his appointment, or at such other time(s) or time periods as the Commission may specify.

14. At any time during the term of the trustee's appointment, the Commission may, if it believes that the undertakings are not being properly complied with, request the trustee to carry out the following additional functions ("the request"), and the trustee's mandate shall be deemed to be extended accordingly. In the event of conflict with the initial functions, the trustee shall give priority to the discharge of these additional functions:

(a) to ensure that all assets and business activities to be divested in accordance with the undertakings are operated on an independent arms' length basis consistent with their status;

(b) to ensure the proper divestment of all relevant business assets and activities;

(c) in the trustee's reports, or in any event within no later than one month of being notified of the request, to submit to the Commission a proposal for the method and timescale proposed by the trustee for the divestiture in accordance with the undertakings of the relevant assets and business activities. The Commission will, as soon as reasonably practicable, approve the proposal or indicate any changes that it may require;

(d) in the trustee's reports, or as soon as negotiations are entered into with prospective purchasers, to provide to the Commission sufficient information to enable it to decide on the suitability of the purchasers in question;

(e) to break off negotiations with any prospective purchasers, or to instruct the parties to break off such negotiations, if it appears to the Commission that the negotiations concerned are being conducted with an unsuitable purchaser;

(f) within […](*) (or such other date as the Commission may specify) of being notified of the request, to submit to the Commission for approval an agreement for sale of the whole of the iMCI business to a suitable purchaser; such agreement to be unconditional on both purchaser and seller and irrevocable except for the approvals required from the Commission, and any approvals required from the United States Department of Justice or Federal Communications Commission.

Nothing in this paragraph 14 may result in the divestment of the assets and business activities to be divested in accordance with the undertakings until immediately prior to or contemporaneously with the closing of the merger between the notifying parties.

15. The parties undertake to provide the trustee with all such assistance and information, including copies of all relevant documents, as he may require in carrying out his mandate, and to pay reasonable remuneration for his services.

16. If MCI and WorldCom should announce that their proposed merger has been irrevocably abandoned, the trustee's mandate(s) shall be deemed to be discharged, and his appointment shall be deemed to be terminated.

17. The Commission will use its best endeavours to inform the notifying parties, as soon as reasonably practicable, as regards the suitability of any proposed purchaser(s). The Commission, in determining whether any proposed purchaser is suitable, will take into account whether the prospective purchaser concerned (i) appears to it to possess the status and resources necessary to own and operate the iMCI business over the long term as a viable and significant competitor to the parties, (ii) is independent of the parties, (iii) can be shown not to have significant and relevant commercial connections with them and, (iv) has, or reasonably can obtain, all necessary approvals for the purchase from the relevant competition and other regulatory authorities in the European Community and elsewhere.'

VIII. ASSESSMENT OF UNDERTAKINGS

(137) In assessing the adequacy of the undertakings, the Commission started from the premise that, if a divestiture were to be offered as the remedy,

then given WorldCom's strength in the market place, it was necessary to secure the divestiture of all or substantially all of the overlapping Internet activities of the merging parties. Furthermore, given the level of concentration in this market, it was felt that the divested business should be preserved so far as possible as a single unit, and hence as a potential competitive force, and should be divested to an acquirer who was capable of replacing the departing player in the market.

(138) The parties' initial proposal for divestiture, which involved the selection of an identified buyer prior to the Commission taking a final decision on the notification, was market tested, and the results were used in further discussions with the parties about an improved remedy, which is reflected in the undertakings.

A. RESULTS OF MARKET TESTING

(139) In general, respondents to the market tests expressed views falling into two broad categories. One group of respondents felt that no divestment, no matter what its scale, would be sufficient to address the problems of the Internet, which could only be remedied by the regulation of interconnection. The other group believed a divestiture remedy was possible, but tended to favour a divestment involving WorldCom's UUNet subsidiary, and were in general sceptical about the scope for separating out MCI's Internet activities from its general telecoms activities. Some believed however that a full divestiture of MCI's Internet networks, if achievable, would be capable of remedying the competition concerns.

1. ***Regulation***

(140) The Commission did not take a view on whether such regulation might be required in the longer term, but noted that the competition concerns arising from the notified concentration could only be resolved by a modification proposed by the parties, and that regulation of the Internet was not therefore a solution in the context of the current notification.

2. ***Technical issues***

(141) The objections to the unbundling of MCI's Internet activities from its telecoms activities related to both technical and commercial/marketing issues. In the case of MCI the same physical cable infrastructure is used to carry both telecoms and Internet traffic, and the bulk of traffic over that network is not Internet traffic. The Commission was advised that, in view of the relatively small proportion of total capacity which was dedicated to the carriage of Internet traffic, it would not be possible to split out a separate physical cable network for Internet traffic alone. Under the parties' proposed remedy, therefore, an acquirer would be given leases of cable facilities, together with appropriate rights of access and co-location, to enable him to run a virtual network over MCI's physical network.

(142) It was recognised, however, that such a dependency arrangement might not provide a long term solution. It was noted that other successful top level ISPs tended to be 'facilities based', that is to own rather than to lease their own physical networks. An ISP who had to lease facilities permanently from a competitor would be dependent on that competitor. An acceptable buyer ought therefore to be in a position either to migrate its traffic more or less immediately onto an existing alternative network, or to build its own network in a reasonable period of time and then migrate traffic onto it. The most suitable type of acquirer might therefore be facilities based or capable of becoming so, and could be, for example, either a telephone company with existing physical facilities but no Internet customer base, or perhaps an existing Internet player not currently operating as a top level ISP but with the potential to do so if given the appropriate customer base. The identity of the buyer would therefore be important, but it should also be noted that the need to develop a physical network appears to represent a lower barrier to entry than the need to acquire a customer base.

3. ***Commercial and marketing issues***

(143) The second difficulty raised initially by the parties, and later by some third party respondents to the market tests, was that it

would be difficult in commercial and marketing terms for MCI to separate out the provision of telecoms and Internet services, because both were offered to their customers as a single bundled package, whether or not in legal terms they were achieved by separate contracts. Some respondents to the market tests painted a different picture, implying that, at least among the customer group consulted, most would have had no difficulty with buying their Internet service and telephone service from separate providers. Upon more detailed examination it appeared that, even where customers bought both telecoms and Internet services from the same supplier, those services were frequently dealt with by means of distinct, and separable, contracts.

(144) In the light of the above, the Commission concluded that a remedy involving the divestment of the Internet business of MCI could, if properly crafted, be acceptable as a means of remedying the competition concerns in this case.

B. THE BUSINESS TO BE SOLD

(145) The parties' proposed remedy involves the incorporation of all the activities to be divested (collectively known as 'the iMCI business') into a separate wholly owned subsidiary, NewCo, to be sold as a single entity to one buyer. […](*).

1. *Network and network-related assets*

(146) The assets and property rights which are to be transferred are set out in the undertakings. The buyer of NewCo would acquire outright ownership of certain tangible and intangible assets required for the construction of an Internet network, (routers, servers, switches, modems, ports, related network infrastructure, address space, domain names, etc.). The purchaser would not, however, acquire the underlying physical network of MCI (for the reasons discussed above), but it would be given leases and associated contractual rights to permit it to use the equipment concerned (rights of access, co-location, and so forth) to run a virtual network over MCI's physical infrastructure.

(147) An important part of a top level ISP's service offering will be the ability to maintain peering interconnection with other similarly placed providers. The undertaking would give the acquirer the guarantee of peering for five years […](*). While the undertakings cannot guarantee that the acquirer will be able to maintain peering interconnection with other top-level networks, the fact that peering is secured with what will remain the largest network despite divestment, together with the traffic the acquirer will generate, should provide the acquirer with the means to continue providing universal connectivity.

(148) As regards leases, rights of access and co-location, […](*) terms would be offered […](*), after which MCI WorldCom would offer service […](*) terms for a further […](*) if required. In view of the desirability of the acquirer becoming 'facilities based' in due course, consideration needs to be given to whether these arrangements provide adequate time for the migration of the traffic onto a new network. Third party estimates of the length of time it would take to do this varied from almost no time, for an acquirer who is already facilities based, to periods of […](*) for an acquirer who had to build a network from scratch. The […](*) period […](*) should be sufficient to permit the transfer of all relevant activity to the alternative network and to permit that network to operate fully independently of MCI. In the light of these considerations, the undertakings are considered satisfactory on this point.

2. *The employees*

(149) The results of the market test suggested that an Internet operation of the size of MCI's Internet activities could require several hundred staff to run. The parties have indicated to the Commission that around 800 staff would be needed to run the MCI's Internet activities, and that they would make these available to the acquirer, subject to the acquirer's needs. However the number of employees would depend to a large extent on the identity of the purchaser, and its level of involvement in the same type of Internet activities as MCI. For that reason, the undertakings would leave the number of employees to be transferred as a matter for negotiation between the vendor and the acquirer.

3. *Non-solicit/non-compete provisions*

(150) The undertakings include non-solicitation and non-contract provisions […](*).

4. *The customer base*

(151) The customer base can be considered in three broad categories: ISP customers (resellers), dedicated access customers (final users) and dial up consumers. This latter category consists of both residential and business clients.

(i) **ISP customers**

(152) The undertakings comprise the divestment of […](*) ISP customers. No particular issues arise as to the assignment of this group of customers, other than to note that they are likely to be the most volatile, in the sense of their readiness to move to alternative providers, if their needs are not readily met. MCI WorldCom would be prohibited from contracting with this category of customers for a period of two years, hence they cannot entice those customers back to them even if they decide not to stay with the new provider. This should prevent the merger leading to an enhancement of market power in respect of this group of customers.

(ii) **Dedicated access customers**

(153) The undertakings would involve the transfer of […](*) customers in this category to NewCo. For the majority of such customers there is no legal obstacle to their assignment, and they will be assigned. There exists, however, a small category of customers with so-called 'non-assignable' contracts. These are contracts which include a prohibition on assignment, whether absolute, or conditional on the consent of the customer. Those contracts where the prohibition is conditional may also include an additional proviso stipulating that consent to assignment must not be unreasonably withheld. […](*).

(154) It might be expected that only the larger and more important clients would have non-assignability clauses. However, this is not necessarily correct. Whether such a clause has been written in depends in the first place on whether the customer concerned requested it. Customers with the bargaining power to obtain such a clause are not necessarily large buyers of Internet services and might, for example, be large buyers of telecoms services from MCI, but have only relatively small Internet purchases. […](*).

(155) The undertakings anticipate the possibility that some customers may not be persuadable. The parties believe that a requirement to transfer all customers, irrespective of the existence of such clauses, might give the remaining few customers undue negotiating power, in terms of their ability to make unreasonable demands as the price of their consent. This would be particularly so if the customers in question were able to use their purchases of non-Internet services as a bargaining counter in the negotiations. The parties have accordingly proposed that they should be required to transfer contracts [for in excess of 90 %](*) of total dedicated access revenues and be given a leeway of […](*). This figure of […](*) of revenues for dedicated access translates to around […](*) of all MCI's Internet revenues. […](*) The […](*) percentage of untransferred customers represents the upper limit, and the percentage remaining may well be lower.

(156) Where such contracts cannot be transferred, the parties have undertaken in any event to put the traffic on the network of the acquirer, and to pay […](*) of the revenues thereby obtained to the acquirer. In effect, therefore, the upstream/transport element of the traffic would be handled by the acquirer whilst the retail interface with the client would remain with MCI WorldCom. Once the contracts in question expire, the non-solicit and non-compete provisions would prevent the firms concerned from going elsewhere than to the merging parties for their ISP services. Thus the residual market power conferred on MCI WorldCom by the retention of the retail elements of this category of contracts is small, and not considered capable of bringing any significant accretion of market power.

(157) The main concern must be to ensure that the customers transferred do not migrate back to

MCI WorldCom and hence enhance its market power. The non-compete provisions will have their place in preventing this, in the sense that even if the transferred customers prefer not to remain with NewCo (a decision which will be influenced by NewCo's ability to maintain its position in the market place), the non-compete provisions would prevent MCI WorldCom from soliciting or contracting with them for a minimum period of 18 months for dedicated access (or two years for ISPs). Thus to the extent that, within the relevant non-compete period, customers of NewCo might turn elsewhere after their contracts came to an end, the demand for the services concerned would still accrue to competitors of MCI WorldCom, rather than to MCI WorldCom itself.

(iii) **Retail dial-up**

(158) The parties have offered to make retail dial up customers available to the acquirer, but the undertakings do not require the acquirer to accept those customers. The category of retail dial-up includes both business customers without dedicated access, and private individuals. According to the parties, this group of consumers represents less than […](*) of MCI's business by revenue but only […](*) of traffic […](*).

(159) As such customers represent only […](*) of MCI's traffic flow and are by their nature not content providers, allowing MCI WorldCom to retain them should not give rise to a risk of any significant enhancement of market power. That said, such consumers could become more important in the future, particularly if technical developments mean Internet begins to carry, in commercially significant volumes, traffic which is today carried on traditional voice telephony circuits. If this happens, the profitability of supplying such Internet services to such domestic customers might be expected to increase, relative to the supply of traditional telephone services.

(160) The undertakings therefore propose to offer this customer base as part of the sale package to the purchaser but to leave it to the purchaser's discretion to decide whether or not to take them.

(161) In the worst-case scenario, 5 % in revenue terms of the dedicated access customers might come back to MCI WorldCom when permitted to do so, and the dial-up customers would remain on MCI WorldCom's books. However, even this would imply only a marginal enhancement to MCI WorldCom's market power, which would still be consistent with effective eradication of the competition concerns created by the merger.

5. ***Value added services***

(162) Some respondents to the market tests suggested that an Internet access business could not function as such effectively unless it had the skills to offer certain specific value added services or that the supplier of such services could influence the choice of the Internet access provider and that such services should all be divested. The services in questions were web hosting, managed firewalls, Intranet and Extranet. The parties agreed to include web hosting and managed firewalls in the assets to be divested but argued that Intranets and Extranets were not part of the public Internet network, and their traffic did not contribute to market power on the public Internet. In addition, although the value added services commonly mentioned in this context can be provided by the ISP who supplies the public Internet access connection, it need not necessarily be the case. The different services can be provided to the same customer by different ISPs, and the value added services can be supplied by companies who are not active as ISPs.

(163) As to whether it was necessary to include 'Intranets' or 'Extranets', the first difficulty was a definitional one. It was suggested that Intranets might be distinguished from virtual private networks in general by the fact that they were run on the TCP/IP protocol. However, it appeared that some virtual networks (VPNs) using this protocol might be based on X25, Frame Relay or ATM, and that TCP/IP might not be the only protocol in use over the underlying VPN, or indeed that the Internet component of the VPN might be very small. It also appeared that Intranets or Extranets were in general less complex than a public Internet network, and in principle easier to run, hence not requiring the special skills which were

required for the Internet at large. It appeared doubtful whether the offering of Intranet or Extranet could provide a gateway to the offering of Internet services. This appears to be less the case for web hosting and managed firewall services, which are services required for networks with a public Internet connection.

C. IMPLEMENTATION

(164) There has been an exchange of letters between the Director-General of the Directorate-General for Competition, and the Assistant Attorney General in charge of the Antitrust Division, United States Department of Justice (DoJ), in accordance with Article IV of the Agreement between the European Communities and the Government of the United States of America regarding the application of their competition laws [10], whereby the Commission requested the DoJ's cooperation regarding the undertakings which were mutually offered to both the Commission and the DoJ. The DoJ confirmed that it will take whatever steps are necessary and appropriate to evaluate, and if it finds them to be sufficient, to seek the effective implementation of these undertakings.

IX. **CONCLUSION**

(165) The notified merger of MCI and WorldCom should be declared compatible with the common market and the functioning of the EEA Agreement, subject to the condition of full compliance with the undertakings given by the notifying parties to the Commission, as set out in Section VII of this Decision,

HAS ADOPTED THIS DECISION:

Article 1

The concentration notified by WorldCom, Inc. and MCI Communications Corporation on 20 November 1997, relating to the full merger between the notifying parties, is declared compatible with the common market and the functioning of the EEA Agreement, subject to the condition of full compliance with the undertakings given by the notifying parties to the Commission, as set out in Section VII of this Decision.

Article 2

This Decision is addressed to:

WorldCom, Inc.
515 East Amite Street
Jackson
Mississippi 39201-2702
United States of America

MCI Communications Corporation
1801 Pennsylvania Avenue, N.W.
Washington, D.C. 20006-3060
United States of America

Done at Brussels, 8 July 1998.

For the Commission
Karel VAN MIERT
Member of the Commission

[10] OJ L 95, 27.4.1995, p. 47.