

services include companies offering only these services, interexchange carriers, cable companies, satellite companies, the BOCs, and utilities. The generation and development of additional applications and technology is expected to increase competition within the industry still further.

The WorldCom MCI merger will do nothing to slow the dynamic growth the Internet is experiencing or to diminish the vigorous competition among providers of Internet services. Various petitioners argue, in a scattershot of claims, that MCI WorldCom will have market power in the provision of Internet "backbone" service, and that the merged company will somehow be able to exploit its market position and dominate its competitors. These arguments are completely without merit. MCI WorldCom will not control any essential or bottleneck facilities that could be used to wield market power. Numerous ISPs operate backbone networks, and the number is growing as Internet traffic increases. The merger will not affect MCI WorldCom's incentives with respect to peering, and MCI WorldCom would have nothing to gain and everything to lose if it tried to take advantage of the ISPs with which it needs to interconnect in order to achieve the global connectivity that its customers demand. Nor will the merger produce any consolidation in the management of Network Access Points ("NAPs"), and in any event, the continuing proliferation of NAPs, and the ability to connect to multiple NAPs, make it impossible to use NAPs to disadvantage ISPs that have chosen for the time being to use one NAP instead of another. The Internet is -- by its very design -- too flexible and resilient to be dominated by any one entity, and the MCI WorldCom merger will do nothing to stunt the Internet's growth or inhibit competition. The competitiveness and growth of the international Internet business likewise precludes any competitive problem resulting from the merger. The regulatory requirements proposed by one commenter are neither necessary nor

appropriate, and could only impede MCI WorldCom's ability to participate fully in the vigorously growing and robustly competitive Internet services market.

Indeed, the petitions raise a more fundamental threshold question -- whether the merger presents an appropriate occasion for the Commission to exercise any jurisdiction it may have over Internet services. The starting point for the Commission's analysis is the express statutory policy expressed by Congress in the Telecommunications Act of 1996:

It is the policy of the United States -- . . . to preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, *unfettered by Federal or State regulation*.

47 U.S.C. § 230(b)(2) (emphasis added). According to the Supreme Court, “[n]either before nor after the enactment of the [1996 Act] have the vast democratic fora of the Internet been subject to the type of regulation that has attended the broadcast industry.”¹⁰⁵

Consistent with this principle, the Commission has appropriately refrained from regulating the Internet in any way.¹⁰⁶ The Commission has never exercised Title II authority over ISPs or the

¹⁰⁵ *Reno*, 117 S. Ct at 2343.

¹⁰⁶ *See, e.g.*, Werbach, “Digital Tornado: The Internet and Telecommunications Policy” OPP Working Paper 29, March 1997 at 29:

The Commission can and should greatly limit the extent to which its actions interfere with the functioning of the Internet services market. Communications regulation has traditionally been justified by the presence of dominant firms, by overwhelming public interest imperatives, or by the inherent invasiveness of broadcast media. *Most* of these justifications simply do not exist in the Internet realm. (Emphasis added).

Internet.¹⁰⁷ It is also true that the Commission's exercise of its Title II authority over common carriers has profoundly and positively influenced the development of the Internet and enhanced services generally through the pricing policies established by the Commission as part of its access charge system, and in other aspects of its implementation of the 1996 Act.¹⁰⁸ The Commission should not, however, single out through a merger review one of thousands of ISPs that comprise the most complex, dynamic, and explosive telecommunications phenomenon of this century for regulations applied to no other competitor. Imposing Internet-related conditions on the MCI WorldCom merger would unavoidably have the effect of interfering with the unregulated market forces that have driven the Internet's extraordinary growth.

For the reasons discussed below, the merger will not harm competition in the provision of Internet services. At a minimum, given the statutory policy of non-regulation, the Commission should not intervene without compelling evidence of imminent market failure, and the record could not conceivably support such a finding. The Commission should allow the Internet to continue to thrive as it has done to date, free of governmental interference.¹⁰⁹

A. MCI WorldCom will not control the provision of Internet "backbone" services.

¹⁰⁷ Amendment of Section 64.702 of the Commission's Rules and Regulations, *Final Decision*, Docket No. 20828 (rel. May 2, 1980) ("*Second Computer Inquiry*"). See 47 C.F.R. § 64.702(a).

¹⁰⁸ The Commission has retained many of the Computer Inquiry safeguards in response to Section 272 of the Communications Act. See *In the Matter of Implementation of the Non-Accounting Safeguards of Sections 271 and 272 of the Communications Act of 1934*, *First Report and Order*, CC Docket No. 96-149 (rel. Dec. 24, 1996).

¹⁰⁹ See 47 U.S.C. § 230(b)(2).

Petitioners make a broad range of assertions about WorldCom's and MCI's market position in the provision of Internet services in general, and Internet "backbone" services in particular, all of which boil down to the assertion that the merged company will "control" or "dominate" half or more of the so-called Internet backbone, and thereby wield market power over the Internet.¹¹⁰ These assertions, however, ignore the fact that Internet backbones are made up of basic telecommunications transmission facilities and equipment that are widely available and easily affordable by new market entrants.

On a threshold point, WorldCom and MCI vigorously disagree with the suggestion that there is a separate "Internet backbone" market.¹¹¹ As detailed below, an Internet backbone is generally understood to consist of TCP/IP routers, switches and other equipment, such as modems, connected to basic underlying telecommunications transmission facilities. Because the same transmission facilities are used for Internet backbone and other services, including traditional voice and data services, any communications company that wishes to become a backbone provider can do so by purchasing the appropriate TCP/IP equipment and connecting such equipment to the transmission facilities that it leases or owns. The fungibility of transmission facilities used for Internet services

¹¹⁰ See, e.g., *CWA Comments* at 2; *Simply Internet Petition* at 4, 7; *Bell Atlantic Petition* at 3.

¹¹¹ There is no generally accepted definition of "Internet backbone." In addition to the technical definition set forth in the text, dial-up and dedicated Internet access provided on a wholesale basis by one ISP to other ISPs are sometimes called Internet "backbone" services. In reality, the difference between an ISP "backbone" provider and other ISPs is one of degree rather than a clear demarcation.

and other circuit-switched and packet-switched services precludes any finding of an independent and distinct market for "Internet backbone" services.

The natural consequence of this fact is that competition to provide Internet backbone services is as vigorous as competition to provide the interexchange telecommunications services supported by telecommunications transmission facilities. Existing providers, low barriers to entry, continued exponential growth, and a protocol specifically designed to provide flexibility and accommodate change combine to ensure that no company could conceivably dominate the provision of Internet services.

The ability of customers to change ISPs means that MCI WorldCom would not try to take advantage of them and trigger the resulting market backlash. Customers change ISPs on a regular basis. The merger will have no effect on the ease of making such changes.

Nor will the merger have any effect on peering. MCI WorldCom will have the same imperative to interconnect with other ISPs that each company has now -- MCI WorldCom will be only one of the thousands of ISPs that provide Internet service, and it must be able to offer its customers access to all of these networks through interconnection with other ISPs.

1. Wide availability of the underlying transmission facilities and commonly available routers, switches and modems that make up Internet backbones preclude any competitive threat from the merger.

An Internet backbone network is generally understood to mean an underlying structure of (a) transmission facilities that are self-provided or leased from telephone companies,¹¹² and (b) TCP/IP routers, switches and modems connected to the underlying physical transmission facilities. The needed transmission capacity is widely available from many carriers, and the routers, switches and modems are readily available from a variety of third-party vendors. Any telecommunications carrier or ISP could obtain the necessary hardware and software and become an Internet backbone provider -- just as any computer can use the TCP/IP protocol and thereby become part of the Internet.

Other than transmission capacity, one needs standard TCP/IP-compatible equipment and software widely available from third parties to provide Internet backbone services. No petitioner claims, or has any basis to claim, that WorldCom or MCI controls, or could conceivably achieve control of, these components used to provide Internet or Internet backbone services.

The alleged source of any competitive issue presented by the MCI WorldCom merger arises from the transmission facilities which MCI and WorldCom would utilize to provide Internet services. These transmission facilities carry all kinds of traffic -- voice and data, circuit-switched

¹¹² As explained below, long-haul transmission facilities are readily available in a competitive market. There is, however, one link in the chain where competition has not yet arrived, and that is the first link controlled by ILECs. ISPs and their customers generally depend on the ILEC not only to connect the customer to the ISP, but also to connect the hubs within local calling areas. As explained in Section II, *supra*, the merger holds the promise to create competition for these facilities over which all Internet traffic must flow.

and packet-switched -- and the transmission capacity used for Internet services is fully substitutable with capacity used for voice and other traffic. *See* Carlton/Sider Decl. ¶ 61. In particular:

- * digital transmission facilities can be used equally efficiently to carry voice and/or data and/or Internet traffic;
- * all digital transmissions, whether voice or otherwise, are translated into bits and all bits are managed in the same manner in a transmission system; and
- * the costs of building underlying transmission capacity for voice traffic and Internet traffic (or of leasing it from a facilities-based carrier) is the same; indeed the owner of the facilities usually will not be aware of what type of traffic is being carried.

The critical fact is that there is a significant and increasing amount of transmission capacity available that can be used to carry Internet traffic. As explained at pages 334-36 above, a significant and growing number of carriers have constructed national networks, and other carriers have made substantial investments in regional networks whose reach can readily be extended. Petitioners would have the Commission look only at well-established IXC's, and ignore significant recent entrants such as Qwest, IXC Communications, Williams and Level 3¹¹³ (as well as a host of regional carriers). At year end 1996, a combined MCI WorldCom would have had a share of around 31.6 percent of total interexchange fiber miles, with AT&T having over 42.7 percent and Sprint over 15.9 percent.¹¹⁴ Taken by itself, a 31.6-percent share is not indicative of dominance on the part of MCI WorldCom. But even more importantly, no reasonable analysis can exclude major recent facilities-based entry and the imminent prospect of even more. *See supra* pp. 34-36 . All of this new transmission

¹¹³ As discussed at page 36 above, Level 3 is proposing to construct a packet-switched network to carry Internet traffic.

¹¹⁴ FCC "Fiber Deployment Update End of Year 1996." *See supra* note 46.

capacity is planned to be in, up, and running by the end of 1999, well within the two year period that the Commission considers in assessing the existence of competition.¹¹⁵

Any assessment of capacity must also take into account the fact that electronics can vastly increase the amount of traffic that these networks can carry without adding a single additional mile of fiber. *See* Carlton/Sider Decl. ¶ 61. As a result, there is a huge amount of untapped potential capacity that could be made available by existing U.S. facilities-based carriers and new facilities-based entrants for carrying Internet and other traffic.¹¹⁶

The only certainty is that existing and available capacity will continue to grow in response to growing demand for all kinds of telecommunications services, including Internet services. It is absurd to think that MCI WorldCom would decide not to participate in the growth of the Internet and instead decide to let available or easily expandable capacity remain idle and non-revenue-generating. Just as the continuing growth of capacity indicates that the MCI WorldCom merger will not harm competition in the long distance market, *see supra* pp. 34-36, the same existing and growing capacity means that the merger will not reduce competition in the provision of Internet services.

¹¹⁵ 1992 U.S. Department of Justice Merger Guidelines, ¶ 3.2. The Commission utilizes the Guidelines as part of its public interest analysis.

¹¹⁶ U.S. domestic fiber capacity was most recently documented in the FCC's "Fiber Deployment Update End of Year 1996." That report lists the number of route and fiber miles for individual carriers, but it does not provide any data on the capabilities of the electronics deployed in their networks, nor do carriers publicly report this information. As a result, the true capacity of the networks is unreported and unavailable.

2. The merger will not and could not impair vigorous and increasing competition to meet the exploding demand for Internet services.

As one would expect in light of the available transmission capacity and the resulting low barriers to entry, providers of backbone services compete vigorously with each other. The industry publication *Telegeography 1997-98* (at p. 76) lists 32 major North American backbone providers, and *Boardwatch Magazine* reports that the number of U.S. national Internet backbone providers has grown from 9 in the summer of 1996, to 22 in May 1997, to 37 in the fall of 1997.¹¹⁷ The relative ease of becoming a major provider and expanding the capacity or reach of an ISP backbone network is further demonstrated by recent industry developments. For example, petitioner GTE has widely advertised the fact that it is “developing a 15,000 mile data network stretching from the eastern seaboard to the California coast” that it claims will expand the GTE backbone to “100 times” the size of today’s Internet.¹¹⁸ Likewise, Apex Global Internet Services (AGIS) recently announced that it has acquired the right to use a 10,000-mile fiber optic cable from Qwest Communications that will enable AGIS to provide dedicated Internet service connections across the United States.¹¹⁹ Finally, just last Friday, PSINet shareholders overwhelmingly approved a deal with IXC Internet Services to exchange 20% of PSINet’s outstanding shares for access to a 10,000 mile OC-48 fiber network.¹²⁰

¹¹⁷ *Boardwatch Magazine*, May/June 1997, Fall 1997.

¹¹⁸ *The Wall Street Journal*, Jan. 7, 1998, advertisement at pp. A8-A9.

¹¹⁹ See “AGIS to Enter National Market Through \$260 Million Deal,” *The Detroit News*, Jan. 7, 1998.

¹²⁰ *Communications Daily*, January 26, 1998.

Allegations by various petitioners that MCI WorldCom will control over 50 percent of the Internet “backbone” market are based on unreliable data and an analysis that is fundamentally flawed. For example, CWA's putative share analysis relies on Internet connection statistics reported in the June 1997 issue of *Boardwatch Magazine*. *CWA Comments* at 7. *Boardwatch Magazine*'s methodology for calculating the number of connections is unclear, but it is abundantly clear that the universe of “backbone” networks considered in CWA's analysis is limited to the *nine* listed in the referenced table. The list of backbone providers included in the analysis is therefore far from complete because it excludes some two dozen major providers. *See also* Carlton/Sider Decl. ¶¶ 65-66.

Even if the list of providers were complete, merely adding up all the Internet connections to obtain a total, and then calculating percentages for each ISP, would yield misleading results. For one thing, there would be significant double-counting because ISPs are often connected to more than one other ISP “backbone” provider. *See* Carlton/Sider Decl. ¶ 72. In addition, the number of connections at any one point in time can change as ISPs can and do switch from one backbone provider to another. In any event, a number of connections does not necessarily translate into amounts of revenue, and revenue is a better indicator of a provider's relative position in this context. The number of ISP connections does not indicate whether the ISPs with whom those connections are maintained are large, small, or medium-sized; for this reason, among others, it does not indicate the ISP's actual position within the Internet service industry.¹²¹

¹²¹ MCI and WorldCom believe that revenue data provide the most accurate approximation of the position of ISPs in the Internet services sector. Indeed, most industry surveys of which the applicants are aware (including those by International Data Corporation, Forrester Research Group, Frost & Sullivan, Yankee Group and Maloff Group International) use revenues as the measurement

Bell Atlantic also uses a faulty analysis of Internet routing table information which yields a result that WorldCom and MCI would “own 58% of customer ‘routes’ on the Internet” to support its assertion that MCI WorldCom would control the Internet. *Bell Atlantic Petition* at 6. Although WorldCom and MCI do not believe that routing table entries provide an appropriate measure of ISP market position, an analysis of route entries performed by each of MCI and WorldCom, using a methodology representing a more complete picture of the Internet, indicates that WorldCom and MCI have aggregate route entries of 22.43 percent.¹²²

Assuming, *arguendo*, that there were a discrete market to be measured, MCI and WorldCom believe that revenue would be the best and only reliable means for estimating relative share. Revenues provide the strongest indicator of who the providers of Internet services are and how much their customers are willing to pay for Internet services. Published estimates of revenue for Internet services vary widely,¹²³ but MCI and WorldCom estimate that their combined share would be approximately 20 percent.¹²⁴ MCI WorldCom’s share should be viewed in the context of the many

for market size.

¹²² See Attachment D for methodology.

¹²³ See Frost & Sullivan, U.S. Internet Service Markets, 1996 (estimating the total U.S. Internet services market at \$2.3 billion); Maloff Group International, Inc., 1996-1997 Internet Access Providers Marketplace Analysis (estimating growth of the Internet service provider marketplace from \$1.85 billion in 1996 to \$8.4 billion in 1997), Oct. 1997; and International Data Corporation, The Internet Service Provider marketplace, 1996-2000: A Dual Telecommunications Opportunity (estimating the market for Internet services at \$3.3 billion at the end of 1996), Apr. 1997.

¹²⁴ This percentage was estimated by doubling the total 1996 Internet industry revenue figure of \$2.3 billion taken from the Frost & Sullivan study (see *supra* n.29) in line with analyst growth

large and well-financed backbone providers that compete in the marketplace, such as Sprint, AT&T, GTE, and IBM -- to name only a few.

In any event, the structure of the Internet makes bottleneck control by ISP backbone providers impossible. The Internet is not a monolithic network, but rather a network of public and private networks operating under a common protocol. This network of networks is not controlled, nor susceptible to control, by ISP backbone providers. The existence of multiple national and regional backbone providers enables traffic to be routed in many different ways; indeed, the Internet protocol was designed specifically to permit the routing of transmissions over multiple paths and networks.

The provision of Internet-based services is characterized by dynamic change, rapid growth and ease of entry.¹²⁵ The merger of WorldCom with MCI will not enable the combined company to dominate the Internet -- far from it. The editor of *Boardwatch Magazine* was right about the inability of any one entity to dominate the Internet when he colorfully observed that such an attempt could be "like trying to choke a jello snake by the neck in a roomful of Wesson oil."¹²⁶ Indeed,

estimates, and applying the 1997 estimated Internet revenues of MCI and WorldCom to that base figure.

¹²⁵ The dynamic nature of the Internet is illustrated by the fact that, according to the Fall 1997 issue of *Boardwatch Magazine*, there are now over 4,300 ISPs in the U.S. alone, far more than the 3,000 ISPs cited by CWA. *CWA Comments* at 5.

¹²⁶ *Boardwatch Magazine*, Nov. 1997, at 10. If there are concerns relating to dominance in this area, they should be focused not on MCI WorldCom, but on those who monopolize the provision of local transmission facilities that are an integral component of Internet backbone networks and the means of access to them -- *i.e.*, local exchange carriers like GTE and the BOCs.

according to a recent article in *Internet Week*, "most ISP's don't feel threatened by the [MCI WorldCom] consolidation."¹²⁷

3. ISP customers can and do change ISPs, and the effort required to change IP addresses does not lock ISPs into any backbone provider.

The preceding section demonstrated the low barriers to entry for, and vigorous competition among, providers of Internet services, including Internet "backbone" services (if, indeed, these services should be considered separately). Nevertheless, Bell Atlantic asserts that the alleged anticompetitive effects of the MCI WorldCom merger will be increased because some customers may encounter administrative burdens to change ISPs. *Bell Atlantic Petition* at 10.

As a threshold matter, it is worth noting that the merger does not in any way affect the administrative steps involved in changing ISPs. The most Bell Atlantic can argue is that IP address changes would for some customers be a disincentive to change ISPs in the face of anticompetitive practices by MCI WorldCom. As demonstrated above, however, MCI WorldCom will have no ability to exert control over the provision of Internet services. Given the competitive market, MCI WorldCom will have every incentive to keep its Internet customers satisfied so that they would have no reason to want to change. Moreover, any attempt by MCI WorldCom to exploit customers allegedly locked in would only backfire because potential new customers would choose competitors instead to avoid the problem, and MCI WorldCom would thereby prevent itself from sharing in a substantial part of the spectacular growth that has attracted so many firms to provide Internet services.

¹²⁷ *Internet Week*, Vol. 4, No. 3, Jan. 19, 1998. According to the article, David Jemmett, CEO of Internet backbone provider Winstar GoodNet, stated he does not "believe that the marketplace will put up with any kind of tampering."

Ultimately, Bell Atlantic's complaint goes to the decision as to which customers are assigned portable IP addresses. On this point, MCI, WorldCom and all other ISPs, including Bell Atlantic, follow the IP addressing guidelines set by the Internet Assigned Numbers Authority ("IANA"). In the U.S., these guidelines are promulgated by the American Registry for Internet Numbers ("ARIN"). Attachment E details the history of Internet addressing policies and the organizations that are responsible for setting them.

Moreover, Bell Atlantic is simply wrong in asserting that IP address changes are a meaningful obstacle for existing customers to change ISPs. Simply put, customers change ISPs all the time. Both WorldCom and MCI experience churn among customers for Internet access service. MCI's and WorldCom's customers change ISPs now when they decide they have a reason to change, and they will continue to do so after the merger. Moreover, carriers like AT&T, Sprint, Qwest, GTE, IXC, Level 3, and others investing billions of dollars in Internet infrastructure, additional carriers like Bell Atlantic and the other BOCs planning to follow suit, doubtless intend to win existing customers over from other ISPs as well as attract customers not yet connected to the Internet.

In practice, changing ISPs (or backbone providers) is, in most circumstances, straightforward and relatively inexpensive. For the majority of customers, switching ISPs is largely an administrative matter. Although some switches involve more effort than others, it is possible for any customer to switch, and one ISP cannot prevent a customer from switching to another ISP.

Significantly, for most types of ISP customers, IP addressing is not a concern at all. The vast majority of Internet users use dial-up access to obtain Internet services. In nearly all of these cases, customers use Internet client software which permits the *dynamic* assignment to the customer of an IP address, service addresses of the domain name service and electronic mailbox service at the time

of dial-up. This assignment changes with each session but the change is essentially invisible to the customer. In some cases, to change ISPs, customers may need new Internet access software, but this is commonly supplied by the service provider and usually at no additional cost.

Changing ISPs may be somewhat more involved for dedicated access customers. Large organizations (those with a need for at least a few thousand IP addresses or connectivity to multiple ISPs) qualify under IANA guidelines for "portable IP addresses," and can transfer their IP addresses to new ISPs if they choose to do so. Smaller customers do not qualify for such addresses, and they are provided with IP addresses by their ISP. These customers can, if they choose, configure IP addresses into various points in the customer's network. Many of these customers, however, are now using the Dynamic Host Configuration Protocol ("DHCP") and other means which eliminate the need to configure IP addresses in individual computers. Thus, Bell Atlantic's entire complaint in fact boils down to a situation that affects a subgroup of dedicated access customers that may not yet have adopted, but could readily adopt, measures that would facilitate changing IP addresses. These customers can and do change ISPs, with moderately more effort than other categories of ISP customers.

At bottom, Bell Atlantic's IP address concern is a non-issue. The vast majority of customers can change ISPs with little effort. Customers that are directly connected to an ISP and do not have portable IP addresses have tools available to facilitate IP address changes.

4. MCI's and WorldCom's peering policies are appropriate, and the proposed merger would have no effect on peering.

CWA raises spurious allegations with respect to WorldCom's peering policies. *CWA Comments* at 12-16. CWA's argument begins with a false premise -- that, as a "dominant" backbone

provider, WorldCom has already engaged in anticompetitive practices with respect to peering -- and predictably reaches an incorrect conclusion about the effect of the merger on MCI WorldCom's peering policies. *Id.* at 15. CWA's argument is wrong on the facts, and reflects a complete misunderstanding of the nature of peering.

First, neither WorldCom, MCI nor the combined MCI WorldCom is or will be dominant in the provision of Internet-based services, as already demonstrated. Second, WorldCom's and MCI's peering policies have supported, and will continue post-merger to support, mutually beneficial peering arrangements.¹²⁸ Third, the merger will not change WorldCom's or MCI's incentive to peer when peering is appropriate, and to interconnect with ISPs through other arrangements when peering does not compensate one of the parties for the terminating function it provides.

There are two main types of interconnection between ISPs: "dedicated access" and "peering."¹²⁹ Many ISPs achieve global interconnectivity by purchasing dedicated access from one or more ISPs. Dedicated access service includes transit across an ISP's network: two ISPs may interconnect through a third ISP that performs a transit function by carrying Internet traffic over its network between the networks of the other ISPs. In a dedicated access arrangement, an ISP agrees both to deliver traffic to any of its own customers (whether those customers are end users or ISPs), and to make arrangements with other ISPs for delivery of traffic to any of their customers. Entities --

¹²⁸ WorldCom's May 1997 press announcement describing its peering policy has been described as a decision to "charge for peering." *CWA Comments* at 15. Rather, the announcement explains that WorldCom offers dedicated access services to those ISPs who do not meet its peering policy guidelines.

¹²⁹ For those not familiar with the history and terminology of Internet interconnection, Attachment F provides "A Brief History of Network Access Points (NAPs) and Internet Exchanges."

ISPs and end-users alike -- that purchase dedicated access from WorldCom and MCI, for example, can exchange Internet traffic with customers of essentially all ISPs in the world even though WorldCom and MCI peer with only a small portion of those ISPs.

“Peering,” in its simplest terms, is a technical arrangement by which two ISPs exchange traffic either through a public exchange point (public or NAP peering) or over point-to-point connections between hubs of each ISP (direct peering). The connections that ISPs provide to “dedicated access” customers differ from the connections they provide to “peers” in that the former involve a transit function and the latter do not. In a peering relationship, each ISP delivers the traffic received from the other ISP only to the receiving ISP’s own customers, whether such customers are ISPs or end users, but not to ISPs with which it peers. Like peers, ISPs that interconnect through dedicated access arrangements exchange traffic directly with each other, and they also receive the benefit of transit beyond the directly interconnected networks, to the networks of all interconnected ISPs. The lack of transit in a peering relationship means that a peer must make other arrangements with other ISPs to have traffic delivered to the customers of those other ISPs.¹³⁰

Peering may be viewed as involving payment in kind, rather than in cash - a kind of “barter” arrangement. Peering does not involve the exchange of traffic for “free.” Peering involves a *quid pro quo* - one ISP agrees to terminate the traffic of another in exchange for the second ISP's agreement to terminate traffic from the first. Each peer incurs a cost to achieve connectivity with

¹³⁰ The fact that peering does not include transit serves two purposes: it reduces the cost of providing peering because the peer does not have to arrange with other ISPs to deliver traffic to destinations on other ISPs’ networks; and peering arrangements that included transit to any destination on any ISP network would create a disincentive for ISPs to continue to build and expand their own networks and, thereby, discourage growth of the Internet.

the other. Where two ISPs derive mutual benefit from interconnection, it makes sense for them to establish a relationship where no money changes hands, which simplifies the relationship and avoids the costs associated with invoicing, collection and other administrative activities.¹³¹ See Carlton/Sider Decl. ¶ 76.

In general, peering makes sense when the peers exchange roughly comparable amounts of traffic. That is why a number of ISPs, including MCI and UUNET, have established peering policies designed to ensure they get as much as they give in a peering relationship. Peering entails an equivalency of obligation so that neither ISP is providing a “free ride” to the other.

Peering policies of ISPs have changed as the Internet and ISPs have changed. When peering began in the early days of the Internet, all ISPs were roughly equal in size and geographic coverage, and peering developed as a cooperative arrangement to permit mutual connectivity. As the Internet has grown, different ISPs have made different choices about how much to expand their networks and their subscriber base, and a wide variation among ISPs exists in terms of the number of customers, the type of customers, and the size and geographic scope of their networks.¹³² As a result, ISPs now

¹³¹ Trying to create and maintain cross-charging systems would involve significant costs, both for the development of measurement and billing systems and for computer capacity to run those systems on an ongoing basis.

¹³² For example, the “*quid*” would not equal the “*quo*” if an ISP with a network and customers in one city peered with an ISP that had invested in a network connecting multiple cities throughout the United States; the obligations would not be reciprocal because the second ISP would incur the cost of delivering traffic nationwide while the first would incur the cost of constructing a much more limited network. The national ISP would be subsidizing the metropolitan ISP by giving it the benefits of a national network without the costs. See Carlton/Sider Decl. ¶ 77.

decide on a case-by-case basis whether to peer with each other or to interconnect through dedicated access.

It is critical to emphasize that two ISPs need not have the same revenues or the same number of customers for each to want a peering relationship. Traffic between two ISPs of different sizes may be in balance: any individual customer of a small ISP may be as likely to send traffic to any individual customer of a large ISP as vice versa, so even though the large ISP may have many more customers, each ISP may send equivalent amounts of traffic to the other. Similarly, if the smaller ISP has customers from the same broad geographic area as the larger ISP, peering may be mutually beneficial because each ISP is likely to carry traffic exchanged under the peering arrangement the same distance. Thus, each ISP would add approximately the same amount of incremental capacity to its network as a result of the peering arrangement.

This type of cooperative arrangement will continue -- where it makes economic sense -- after the MCI WorldCom merger. The merger will not alter the incentives to peer with ISPs with which WorldCom and MCI now peer. WorldCom and MCI each already has a network used for Internet traffic with broad geographic reach. Moreover, both companies already peer with numerous ISPs of varying sizes in terms of numbers of customers and revenues, and both companies continue to pursue and accept new peering arrangements to the extent consistent with their respective peering policies. Because the amount of revenues or number of customers has no necessary correlation with the scope of its network or the balance of traffic exchanged with other ISPs, the size of the Internet business resulting from the merger will have no effect on the willingness of MCI WorldCom to interconnect with other ISPs. The merged company will continue to interconnect with other ISPs in order to provide its own customers with the connectivity they demand, and to use the most cost-

effective means to do so. Whether the interconnection occurs via peering, or via dedicated access arrangements, is simply a function of economics.

MCI WorldCom will have no incentive or ability to force their peers to convert to a payment-based connection where peering is economically justified. If the merged company tried to force an ISP into a paid customer relationship when a peering relationship was appropriate, the ISP could still give its customers the ability to exchange traffic with MCI WorldCom's customers *without* becoming a customer of MCI WorldCom. Specifically, the ISP could achieve the same interconnectivity with MCI WorldCom's customers by interconnecting via dedicated access with an ISP that interconnected with MCI WorldCom. Thus, any attempt by MCI WorldCom to impose any unreasonable conditions on interconnection would simply cause the affected ISP to utilize the diversity and flexibility of the Internet to reach MCI WorldCom's customers through alternative methods and routes and result in increased revenues for MCI WorldCom's competitors.

Indeed, it is hard to imagine a more certain way to destroy the merged company's reputation and viability in the Internet community than to make it difficult for other ISPs and their customers to exchange traffic with MCI WorldCom and its customers, or to refuse to interconnect on reasonable terms. Because the essence of the Internet network of networks is global connectivity, a purported ISP that did not offer seamless interconnectivity with other networks would, by definition, not be part of the Internet and would not be providing Internet services. The merged company will therefore need to interconnect with other ISPs as much as other ISPs need to interconnect with it -- and as much as MCI and WorldCom each need interconnection today. With only about 20 percent of today's Internet business (as explained above), and with that business growing at exponential rates, MCI WorldCom's overriding incentive would be to continue to

interconnect with other ISPs on reasonable terms that enable it to achieve the connectivity that its customers expect and demand.

B. The merger will not give MCI WorldCom market power through operation of network access points, which are not bottlenecks that allow their operators to exercise control over the Internet.

Bell Atlantic argues that the MCI WorldCom merger should be blocked because WorldCom operates a number of network access points (“NAPs”) and those NAPs supposedly give WorldCom leverage over other ISPs. *Bell Atlantic Petition* at 11. Bell Atlantic's claim is wholly without merit for several independent reasons.

One simple fact disposes of Bell Atlantic’s contentions at the threshold: MCI does not own or operate any NAP. As a result, the merger will have *no* effect either on the degree of concentration in any putative “market” for NAPs or on the “leverage” that Bell Atlantic contends that NAPs give to WorldCom. If WorldCom has any leverage (and it does not), that leverage has nothing to do with this merger.

In any event, no individual NAP is a bottleneck because low barriers to entry have led to a rapid and continuing increase in the number of NAPs, and an ISP can change the NAP or NAPs at which it exchanges traffic with other ISPs. ISPs have a choice among NAPs and can and do exercise that choice. The number of NAPs and their operators has steadily increased as the Internet has grown. In late 1994, there were four U.S. NAPs operated under contracts let by the government through a competitive bidding process: MAE East and MAE West operated by MFS (later acquired by WorldCom); the Chicago NAP operated by Ameritech; and the New York NAP operated by Sprint. Contrary to Bell Atlantic’s claim that there are 11 NAPs in the United States, there are

actually 39 NAPs in the U.S. and three in Canada today.¹³³ The operators of these NAPs include ISPs, telephone companies including two BOCs, CIX (the Commercial Internet Exchange, a trade organization), consortia of ISPs, and independent providers such as Digital Equipment Corporation (which operates the Palo Alto Internet Exchange (PAIX) in California). WorldCom operates seven of the 42 NAPs in North America,¹³⁴ and the MCI merger will not change that figure. Simply put, an ISP has a wide variety of NAPs to which it could link.

ISPs are not locked in to any one NAP. In fact, to increase the number of ISPs with which they interconnect and to achieve redundancy in case of blockage or failure at one NAP, many ISPs interconnect at more than one NAP. ISPs do not have to go far to find NAPs because they are spread across the United States -- 13 locations on the East Coast, ten on the West Coast, seven in the Southwest, nine in the Midwest and three in Canada. Furthermore, nothing would prevent two ISPs from entirely by-passing the NAP and connecting directly to each other. Numerous ISPs, including WorldCom and MCI, have a variety of such direct connection arrangements.¹³⁵

¹³³ A list of the NAPs can be found at <<http://www.isi.edu/div7/ra/NAPs/>>. In addition to the 42 existing NAPs, two "independent" new NAPs, Colocation Corp. in Washington, D.C. and Colomotion in San Francisco, California, each founded by different individual entrepreneurs, were described in Inter@ctive Week, Nov. 10, 1997.

¹³⁴ GridNet, owned by WorldCom, is a member of a consortium of ISPs that operates a NAP in Atlanta.

¹³⁵ Despite its name, a "network access point" does not give access to the Internet *per se*, or even to all other ISPs connected at the NAP. An ISP connected to a NAP is generally not entitled to exchange traffic with every other ISP connected to the NAP. Instead, ISPs negotiate privately with each other regarding bilateral arrangements for exchanging traffic through a NAP.

Moreover, as reflected in the number and range of NAPs described above, the cost of establishing a NAP is low. The growth of the Internet and ISPs' demand for low cost interconnection has fueled the establishment of many new NAPs in the U.S. A new NAP with good collocation facilities, such as Digital Equipment's PAIX, will immediately attract new ISPs. Indeed, Bell Atlantic itself could follow the lead of Ameritech and Pacific Bell and create and operate one or more of its own NAPs.

For these reasons, any attempt by WorldCom pre-merger, or MCI WorldCom post-merger, to take advantage of ISPs connected to any NAP that it operated would not confer any competitive advantage. Instead, any such attempt would trigger a shift by ISPs to connect to one of multiple other NAPs and could encourage the continuing proliferation of NAPs. In light of the ease with which an ISP can route around a NAP, the ease with which new NAPs can be and have been created, and the lack of any connection between the merger and consolidation of ownership or operation of NAPs, Bell Atlantic's NAP-related contentions do not warrant any further investigation or action.

C. The merger would not adversely affect competition in international Internet services.

Telstra asserts that it does not oppose the merger *per se*. *Telstra Comments* at 12. Nonetheless, Telstra argues that MCI and WorldCom, separately or together, could restrict international ISPs' access to U.S. Internet backbone service providers or raise the price of inputs for foreign ISPs. *Id.* at 2, 7-8. Telstra's baseless arguments are premised on Telstra's misunderstandings about the state of competition in the provision of Internet backbone services and international transmission capacity.

Telstra argues that MCI and WorldCom currently possess, or would possess after the merger, market power in the provision of international private line circuits used by foreign ISPs to access U.S. Internet backbone providers. Telstra is wrong. Indeed, as demonstrated in Section IV.B, *supra*, MCI and WorldCom do not, and will not be able to, control the market for international transmission capacity. In the Pacific region, for example, AT&T will remain by far the largest owner of international transmission capacity, including capacity currently used to provide private line services. *See supra* pp. 62-63. Moreover, foreign carriers, including Telstra, have entered or will soon enter the U.S. international market. These carriers typically already own end-to-end whole circuits that may be used to obtain access to the U.S. Moreover, increased competition and declining [unit] costs are driving an increase in transmission capacity.¹³⁶

To the extent Section 214 authority is needed to own and use U.S.-international facilities for the provision of Internet services, Telstra now has such authority. *See supra* note 90. Thus, Telstra is free to provide its own U.S. international facilities and services. Telstra already owns a significant quantity of whole circuits between the U.S. and Canada and Australia, some of which Telstra apparently already uses to provide Internet access.

Telstra also erroneously assumes that MCI WorldCom currently possess or, after the merger, would possess market power in the provision of (1) U.S. domestic private line circuits between international cable head-ends and international gateways (i.e., backhaul); (2) U.S. domestic private line circuits between international gateways and major domestic NAPs, and (3) NAP services. With

¹³⁶ For example, the Southern Cross and U.S.-China cable systems will significantly increase capacity.

respect to backhaul, the merger would have no effect because WorldCom does not currently own its own backhaul facilities. Nor would MCI WorldCom have a dominant position in the provision of transmission facilities between international gateways and major domestic NAPs. Finally, MCI WorldCom also would not control access to NAPs, or access to the Internet via NAPs, as we have already demonstrated. Thus, MCI WorldCom has no ability to control U.S. Internet backbone access.

Based on these false assumptions, Telstra asks the Commission to require unbundling and tariffing of MCI WorldCom's international Internet access services. Telstra's proposal is misguided and contrary to the FCC's policy of refraining from regulation of the Internet. Despite Telstra's claims, it can buy a whole circuit of transoceanic capacity (or use a circuit that it already owns), purchase backhaul from a backhaul provider, and then connect via any U.S. regional or national backbone provider to the "Internet." In response to marketplace demand, a number of ISPs offer end-to-end, managed Internet access, and MCI, WorldCom and other U.S. ISP backbone providers offer foreign ISPs interconnection with their networks at the same price, and on the same terms and conditions that they offer access to domestic ISPs. The bottom line is that Telstra does not need to purchase international transmission capacity from a U.S. backbone provider; in fact, it can provide its own transmission capacity and obtain backbone access separately.¹³⁷

¹³⁷ It is ironic that Telstra seeks regulated unbundling in the United States when Telstra provided only bundled access to its bottleneck facilities in Australia for decades. Until only recently, the only way to deliver traffic to Australia was to lease the Australian half-circuit plus local termination from Telstra. Moreover, Telstra's rates were, and still are, well above cost.