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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
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In the Matter of	)	
	)	
Petition of Bell Atlantic for Relief from Barriers to Deployment of Advanced Telecommunications Service	)	CC Docket No. 98-11
	)	
Petition of U S West for Relief from Barriers to Deployment of Advanced Telecommunications Services	)	CC Docket No. 98-26
	)	
Petition of Ameritech for Relief from Barriers to Investment in Advanced Telecommunications Capability	)	CC Docket No. 98-32

REPLY COMMENTS OF PSINET INC.

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May 6, 1998

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TABLE OF CONTENTS

		PAGE
Discussion		2
I.	The Bell Company Petitions Mischaracterize the Internet Backbones	2
	A. PSINet Designs Its Backbone Services to Ensure High Speed, Reliable Internet Communications	3
	B. PSINet Continues To Make Enormous Investments/Commitments into its Internet Backbone	6
	C. The Bell Companies Misapprehend the Solutions To Improving Internet Performance	7
	D. To The Extent Feasible, PSINet Serves Rural America	8
II.	The Goal of Advance Services Deployment Is Best Served By Opening Up the Bell Companies' Local Access Networks to Competing Providers	9
III.	The Bell Companies Seek Commission Action That Is Contrary To A Host of Statutory and Regulatory Law	10
Conclusion		11

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REPLY COMMENTS OF PSINET INC.

PSINet Inc., by its attorneys, files these reply comments in the above-captioned proceedings initiated by Petitions of Bell Atlantic, U S West, and Ameritech. While the Bell Companies hold onto their monopoly over local telecommunications access to the end user, they ask the Commission for relief from their statutory and regulatory obligations, which are designed to protect the telecommunications and information service industries from monopolistic abuses. They generally contend that such relief would serve Section 706 of the Telecommunications Act, because it would permit the Bell Companies to improve on the current quality, reliability, and universality of Internet services offered by today's Internet service providers. In PSINet's view, such "relief" is contrary to the public interest because it would effectively cede to the Bell Companies a local data access monopoly.

Therefore, PSINet strongly disagrees with the Bell Companies, and urges the Commission to dismiss each of the Petitions. As described further below, the Petitions are grounded in a fundamentally distorted and inaccurate view of today's Internet; the Petitions are

wrong as a matter of policy because the Bell Companies can serve the continued success of the Internet by opening up their local access lines to competing providers, not by developing data access services that are closed to competitors; and the Petitions request relief that would plainly violate statutory and regulatory law.

PSINet brings considerable experience to the issues raised by the Petitions. PSINet was the first commercial Internet service company, and continues to be a leading provider of Internet services and Internet access in the United States and abroad. It is also the leading independent Internet backbone provider in the U.S.,[1] as it is not controlled by any other provider or telecommunications carrier. PSINet's network today includes more than 230 points of presence ("PoPs") in the U.S. and more than 400 PoPs worldwide, each designed and built specifically to handle Internet-based traffic from customers that employ a range of access methods. PSINet engineers and executives have innovated many of the most significant technical and product developments in the Internet's history.

Discussion

I. The Bell Company Petitions Mischaracterize the Internet Backbones

The Bell Companies generally characterize today's Internet backbones as congested, slow, unreliable, underserving rural America, and as unprepared for the increasing consumer and commercial demands of the Internet.[2] According to the Bell Companies, such alleged weaknesses stem from a lack of investment by today's market participants in the Internet infrastructure and technology. The Petitions are largely premised on the assertion that the Bell Companies can improve on, or wholly eradicate, these asserted problems. PSINet disagrees: the

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1 Ten percent of the world's Internet traffic is carried across PSINet's network.

2 Petition of Bell Atlantic, Attachment 2; Petition of U S West at 8-27; Petition of Ameritech at 4-6.

unrivaled success of the Internet is fundamentally based on decisions made by a myriad of competing providers, and not monopolistic end-to-end network control as proposed by the Bell Companies.

In addition, as an Internet backbone provider, PSINet finds that the Bell Companies' claims are simply erroneous. The Internet is comprised of a multitude of regional and national providers, each working on a number of innovative and market-driven approaches to meet its customers' needs and to attract new business by creating better Internet solutions. Unlike the local telecommunications market, no Internet provider holds a monopoly on services, and so issues of reliability, speed, and quality of service are key determinants to the survival and success of each provider. PSINet explains below how its backbone network and services are designed to maximize the quality, speed, and reliability of its customers' Internet communications. Moreover, the Bell Companies' contention that average Internet backbone speeds can be improved with raw bandwidth is a misapprehension of the issue, and misrepresents the high-speed access available on today's Internet. PSINet also believes that the rate at which the Internet has brought advanced services to all Americans, including rural Americans, has been an unequivocal success. To the extent technically and economically feasible, PSINet and other Internet backbone providers have brought high-speed Internet access to America.

A. PSINet Designs Its Backbone Services to Ensure High Speed, Reliable Internet Communications

The Bell Companies' petitions fail to consider the variety of approaches that Internet service providers undertake to significantly improve Internet data speeds and customer satisfaction. Indeed, the innovation driving much of today's Internet is essentially grounded on the need for competing providers to develop new and better approaches to enhance speed,

reliability, and customer satisfaction.[3] This market-based innovation furthers the highest objectives of Section 706 of the 1996 Act by promoting advanced services through competitive markets. By contrast, a single data access monopolist, as proposed by the Bell Companies, would have no incentive at all to invest in a multitude of innovations to improve customers' data and Internet services.

Significantly, the Petitions offer little, if any, analysis on how the competing Internet providers serve their customers. Several of PSINet's own unique design and service features exemplify how the market-based Internet providers are ensuring higher data speeds and more reliable service:

PSINet's PoPs -- The PSINet network is a TCP/IP-based routed infrastructure built upon a redundant switching fabric and consists more than 400 PoPs throughout the world connected together and to the Internet by T1 and T3 dedicated lines, soon to be augmented by a 10,000 mile OC-48 backbone in the U.S. PSINet maintains more than 230 PoPs in the United States.[4] Each PoP is built to a precise, full-service standard that allows the customer to choose its preferred access method: dial-up analog, ISDN, or dedicated lines. Thus, each of PSINet's PoPs is built to serve different classes of customers, from the very large, connecting with dedicated lines, to the smaller customers seeking dial-up 56 K analog access.

PSINet's national PoP deployment illustrates how Internet backbone providers are serving smaller communities with high-speed network access points, even if that community may not be able to support a DS3 PoP. Moreover, PSINet emphasizes that it is only one of many Internet

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3 As Intermedia notes, Internet "[i]ndustry participants are pursuing a variety of strategies" to further address issues of Internet congestion. Comments of Intermedia Communications Inc., CC Dkt. No.s 98-11, 98-32, 98-26 at 21.

4 PSINet will supplement its Reply Comments with color maps detailing PSINet's PoPs and network, as well as its proposed OC-48 network and PoPs.

backbone providers with regional and national PoPs. PSINet's PoPs are built to support a variety of customers, both large and small. The redundancy and flexibility of such a network also greatly enhances service quality and reliability.

PSINet's OC-48 Backbone -- PSINet's network, consisting of T1 and T3 lines, will be significantly enhanced with the expanded backbone employing the OC-48 currently being made available to PSINet by IXC Communications. PSINet's expanded backbone has set a new industry standard, currently being copied by at least two other backbone-providing ISPs.

PSINet's DS3 PoPs -- PSINet has deployed PoPs with lines of DS3 speed or greater (and intends to deploy OC-48 PoPs) in many more locations than the U S West Petition (at 13) has presented to the Commission. Thus, the U S West Petition inaccurately portrays PSINet's network and deployment of high-capacity PoPs. PSINet is uncertain of the accuracy of the DS3 data offered by U S West concerning other providers.

PSINet's Frame Relay Architecture -- In each of PSINet's PoPs, a frame relay switch connects the PoP via a T3 line to the rest of the PSINet network. In this way, PSINet minimizes the number of "hops" across multiple routers.[5] This allows PSINet to deliver the customer data faster, more efficiently, and with fewer dropped packets.

PSINet's approach exemplifies how the Internet's market-based approach, in which no dominant carrier controls, allows competing companies to explore and deploy alternative technological solutions to improve data speeds and service quality.

PSINet's Free Peering -- PSINet offers free peering to other ISPs at over 100 PSINet PoPs in the U.S. Because PSINet provides direct connectivity to more than 10% of the traffic on

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5 The U S West Petition (at 8-9) inaccurately portrays the Internet as a rigid hierarchical network, in which smaller communities are lowest on the connectivity chain. As demonstrated above, the networks of PSINet and other providers are proof that U S West's portrayal, perhaps an unintended result of its classical telephone network view of the world, is a gross oversimplification. The Internet is anything but a rigid hierarchy.

the Internet, this peering allows ISPs and their customers to avoid potentially congested public NAPs.[6] Again, this alternative approach by PSINet allows ISPs to increase the reliability and speed of their customers' communications, by avoiding intermittent congestion that may occur at the "public Internet" NAPs.

PSINet's Network Operations and Monitoring -- PSINet maintains a Network Operations Center (7 days/week, 24 hours/day) staffed with experts monitoring and troubleshooting the PSINet network to ensure performance of the system. In addition, PSINet maintains an up-to-the-minute network status report (available on-line at www.psi.com/cgi/netstatus) for customers to verify the performance and operation of the PSINet network, including outages and repairs.

B. PSINet Continues To Make Enormous Investments/Commitments into its Internet Backbone

As pointed out by several commenters, the Bell Company allegations that Internet backbone providers are not committing sufficient resources to the Internet infrastructure are overwhelmingly refuted. PSINet continues to invest enormous resources into new facilities and technological upgrades of its network in order to keep pace with and stay ahead of investments being made by other Internet backbone providers. Some of PSINet's more recent commitments to improve its network include:

- **OC-48 IRU** -- In February, 1998, PSINet acquired an IRU for up to 10,000 equivalent route miles of fiber-based OC-48 network bandwidth from IXC Communications. OC-48 operates at the equivalent of 2.4 billion bps (50 times faster

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6 See also Comments of AT&T, CC Dkt. No. 98-11, at 25 ("backbone providers are moving toward private peering arrangements, in effect directly connecting each other to bypass these crowded [NAP] crossroads."); Petition of Bell Atlantic, Attachment 2, at 33 (MAE East or MAE West disruption can cause serious Internet congestion).

than typical Internet backbone capacity). This commitment is valued at approximately $240 million.

- **OC-48 Maintenance and Operations Expenses** -- As a result of its commitments for OC-48 capacity, PSINet anticipates that it will incur on an annual basis approximately $1.15 million in operations and maintenance fees.
- **Significant Short-Term Capital Expenditures** -- PSINet expects to incur overall capital expenditures in connection with network build-out of at least $95 million through the end of the year 2000.

C. The Bell Companies Misapprehend the Solutions To Improving Internet Performance

As AT&T pointed out, the Bell Companies generally allege the Internet is congested by latching onto a controversial study reporting average Internet traffic speeds of 40 Kbps.[7] As discussed above, the Bell Companies also fail to consider architectural and design factors that Internet service providers regularly employ to improve data speeds for their customers.

Significantly, while the Bell Companies assert that the way to improve Internet performance is with additional raw bandwidth which they will provide through interLATA lines, they misunderstand the common causes of less-than-expected application performance on the Internet. Since effective data transmission over the Internet depends on low packet loss rather than line capability, such issues would not be resolved through additional lines for raw bandwidth; rather, the causes of Internet congestion are more related to protocol dynamics. Internet performance problems lend themselves better to Internet-specific engineering strategies that are not always emphasized or well-understood in the telephony community.

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7 Comments of AT&T, CC Dkt. No. 98-11, at 24 (noting that the October 21, 1997 Boardwatch Magazine and Keynote Systems Study is highly controverial).

In addition, to the extent performance problems occur at some NAPs, these issues are largely a result of the fact that they are suboptimally engineered for IP traffic, reflecting the limited understanding of Internet performance dynamics by the incumbent LECs who own those NAPs.[8]

D. To the Extent Feasible, PSINet Serves Rural America

PSINet cannot agree with the Bell Companies' contentions that Internet providers today, including the Internet backbone providers, are failing to adequately serve rural America.[9] For example, U S West claims that there is a lack of bandwidth in rural America because the high-speed connections are located only at "the principal nodes of the national network." However, this is simply not the case because, as demonstrated by PSINet's free peering arrangements, rural ISPs may have access to PSINet's backbone-quality services at numerous PSINet PoPs. Further, U S West claims that distance-sensitive costs of rural ISPs to connect to major PoPs also encourage those ISPs to choose the lowest-capacity transport links. However, PSINet and other Internet backbone providers do not charge customers, including connecting ISPs, on a distance-sensitive basis. Ironically, it is the Bell Companies themselves that are the cause of distance-sensitive costs to rural ISPs, as they charge the distance-sensitive rates for T1, T3, and ISDN PRI lines.

To the extent the Bell Companies wish to improve Internet access speeds in rural America, it is well within their ability to do so today, irrespective of the Petitions. For example, the Bell Companies could provision additional PRI ISDN lines in rural exchanges, and at more reasonable rates.

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8 As Bell Atlantic points out, the Pacific Bell's Mae West NAP experienced a significant outage on July 11, 1997. Petition of Bell Atlantic, Attachment 2, at 25.

9 Petition of U S West at 40-41.

II. The Goal of Advance Services Deployment Is Best Served By Opening Up the Bell Companies' Local Access Networks to Competing Providers

In PSINet's view, the relief requested by the Bell Companies for their data services -- including limitations on unbundled network element and wholesale resale obligations -- is antithetical to the public interest. Such "relief" would effectively close the Bell Company local access monopoly to the market pressures of competing providers. With no obligation to offer underlying telecommunications elements (including DSL modems and DSL conditioned loops) to competing providers, the Bell Companies stand ready to monopolize data access in the same way as they now control the local telephony business.

Consistent with the Section 706(a) goal to "promote competition in the local telecommunications market," the deployment of xDSL services is best achieved by opening up the incumbent LEC network so that competing providers can use it to deploy innovative services. Reasonably priced advanced data services are much more likely to be delivered expeditiously to the American consumer when competing providers can gain access to necessary elements of the Bell Company network at cost-based rates. Therefore, PSINet strongly urges the Commission to require the incumbent LECs to offer unbundled loops conditioned for DSL service to all competing providers, including CLECs and ISPs.

By contrast, if the Bell Companies manage to close out competing providers, it is doubtful that they would aggressively deploy cost-based DSL service. The Bell Companies have strong incentives not to deploy such services, which would undermine their existing high-priced T1 and T3 line services. In addition, as MCI points out,[10] the disappointing record of the Bell Companies' ISDN deployment and their unfulfilled promises for advanced video dialtone

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10 Comments of MCI, CC Dkt. No. 98-32, at 19.

networks cast doubt on the Petitioners' promises for rapid "ISP friendly" xDSL deployment.[11] The Petitioners should not be permitted to restrict UNE's from competing providers, nor should vague allegations of unbundling difficulties be countenanced.[12]

III. The Bell Companies Seek Commission Action That Is Contrary to A Host of Statutory and Regulatory Law

PSINet agrees with the arguments of CIX, MCI, and many other commenters that the relief requested by the Petitions would violate key provisions of the Telecommunications Act of 1996 and the Commission's pro-competitive policies and regulations.[13]

Perhaps most significantly, the Commission lacks authority to relieve the Bell Companies from the Section 271 interLATA service restrictions or the Section 251(c) UNE and wholesale resale obligations until the Bell Companies have demonstrated significant steps toward opening up the local telecommunications market. Section 10(d) of the Communications Act, 47 U.S.C. § 160(d), expressly provides that "the Commission may not forbear from applying the requirements of section 251(c) or 271 . . . until it determines that those requirements have been fully implemented."[14] A grant of the relief requested would also conflict with the mandate of

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11 Comments of U S West, CC Dkt. No.s 98-11, 98-32, at 5. For the reasons stated in the CIX reply comments, PSINet does not support use of regulatory deployment benchmarks.

12 PSINet notes that U S West already claims that DSL service using an incumbent LEC's line cannot be offered by a competing provider unless that provider is also willing to serve the customer's voice telephony needs. Id. at 6.

13 See Comments of CIX, CC Dkt. No. 98-32, at 21; Comments of MCI, CC Dkt. No. 98-32, at 31.

14 While Section 706(a) of the 1996 Act generally permits the Commission to utilize regulatory forbearance, this provision is not an independent source of forbearance authority. Rather, it reflects a Congressional mandate for the Commission to use a host of deregulatory tools otherwise available to it for the promotion of advanced services. Forbearance that serves Section 706 goals, however, must meet the statutory test for forbearance under Section 10.

Section 706(a) of the 1996 Act to "promote competition in the local telecommunications market," since it would dismantle UNE competition, wholesale resale competition, and the competitive Section 272 safeguards.

As a practical matter, the interLATA restrictions on the Bell Companies and the obligations to be met prior to lifting those restrictions are critical to ensuring a competitive interLATA Internet market. While the Bell Companies generally claim that LATA boundaries have no significance for Internet communications, the importance of the restriction is not found in whether LATA contours reflect Internet traffic patterns. Rather, the interLATA restriction is centrally relevant to the Internet market because it prevents the Bell Companies from using their monopoly control over local access facilities to compete unfairly against other Internet providers, like PSINet. Section 271 permits Bell Companies to participate in interLATA Internet communications, so long as they comply with the competitive safeguards protecting the rest of the competitive market from monopoly abuses.

Conclusion

For the reasons stated above, PSINet joins the overwhelming majority of commenters asking the Commission to dismiss the Bell Company Petitions.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Reply Comments was this 6th day of May, 1998 hand delivered or mailed, postage prepaid, to the following:

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WASH01A:126209:1:05/06/98
25762-2