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Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

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Federal Communications Commission
Office of Secretary

In the Matter of	)	
	)	
Usage of the Public Switched Network by Information Service and Internet Providers	)	CC Docket No. 96-263

Reply Comments

of

The Southern New England Telephone Company

The Southern New England Telephone Company (SNET), hereby files its reply comments in the above captioned matter, pursuant to the Notice of Inquiry (FCC 96-488) released December 24, 1996 (NOI) by the Federal Communications Commission (Commission). SNET is the Incumbent Local Exchange Carrier (ILEC) providing local telephone service to most of the state of Connecticut with just over 2 million access lines.[1]

I. INTRODUCTION

The Commission has before it sufficient information to initiate a Notice of Proposed Rulemaking (NPRM) on the issue of appropriate pricing treatment for Internet Providers (ISPs). Indeed, the ILECs have demonstrated that action by this Commission is urgently needed to address issues raised by ISP's use of the public switched network.

[1] SNET notes here that it supports the Reply Comments of the United States Telephone Association filed in this proceeding today.

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The Commission should include two issues in the NPRM: (1) terminating the ISP exemption, and (2) alternative pricing structures for the new networks being developed. In these reply comments SNET discusses how the pricing structures currently in place affect the public switch network and drive ISP purchasing behavior. Incorrect pricing structures will produce significant economic harm and impact all users of the public switched network. Coincident with the adoption of a new overlay data network, and a new pricing solution for that network SNET requests the Commission to remove the current ISP exemption from access charges.

II. ISP NETWORK CONFIGURATIONS ARE DRIVEN BY RATE STRUCTURES AND CONTRIBUTE TO THE CONGESTION OF THE PUBLIC SWITCHED NETWORK

ISP use of the public switched network contributes to the network congestion experienced by the ILECs. ISPs use the public switched network to collect their subscribers' usage to the Internet. To access an ISP, the subscriber uses a personal computer and modem to dial a local telephone number. This local telephone number allows the ISP subscriber to access the Internet without any long distance charges, and, in most jurisdictions, any usage charges at all.

The ISP orders local flat rated business lines from various end offices. The local lines terminate at an ISP premise consisting of modem banks. The ISP converts the analog signal to digital and aggregates the traffic onto the Internet. With these local lines, the ISP is purchasing local numbers that cover all of the local calling areas the ISP wishes to serve. In Connecticut an ISP can provide state-wide access toll free by purchasing local lines from just 13 local exchanges. ISPs publish a main telephone number for ISP subscribers to dial, and frequently place these lines in hunting arrangements to handle call overflow. ISPs use these

flat rate lines only to receive calls, and ISP's subscribers use flat rate lines to reach the ISP. Since the subscribers and the ISPs do not incur usage charges, long holding times carry no additional charge.

Since neither the ISP nor the ISP subscriber incurs usage charges for use of the public switched network, neither party has any incentive to monitor call lengths. SNET must then monitor and manage these calls as they pass through the local switch, tandem, and interoffice facilities because neither party worries about their call duration. ISPs do not inform SNET of their network arrangements or usage patterns. Therefore, SNET cannot readily anticipate where additional facilities are needed, and must often respond after the fact. Thus telephony end users may experience dialing delays unless, or until, SNET adds investment to the network. To meet the increased traffic loads, Central Office (CO) equipment must be re-engineered and new equipment added. Within the last twelve months, 260 new trunks, that can be directly attributed to ISP demand, have been added to the network. These additions required an incremental investment of $3 million for switching and transport facilities.[2]

As the growth of the Internet continues, the public switched network will have demands placed on it that it may not be able to meet. While the sky may not fall, real dialing delays, and even limited crashes, may occur unless the problem is addressed. A two part solution is necessary over the long term: (i) an overlay data network to take this traffic off the public switched network altogether, and (ii) a charging structure for access to that network.[3]

[2] SNET comments, page 13-14.
[3] While many parties deny that network congestion is a problem, all nonetheless support construction of an overlay data network. Presumably the overlay is a good idea for some reason.

SNET requests the Commission to recognize the current congestion of the public switched network, and how ISP network arrangements, and network pricing arrangements contribute to the problem.

III. MUTUAL COMPENSATION FOR ISP TRAFFIC EXACERBATES THE PROBLEM OF NETWORK CONGESTION

Mutual compensation exacerbates three separate problems for ISP traffic: first, compensation goes only one way; second, SNET incurs additional network cost; and third, monitoring of the network becomes more difficult when CLECs become intermediaries. The first problem occurs because the fundamental assumption underlying mutual compensation is that the exchange of traffic would be reasonably equal. This is generally true for traditional voice traffic. It is not true when the local traffic is only one way, such as with ISP usage. Because of the volume of traffic terminating with ISPs, the exception becomes a significant problem. When SNET delivers ISP usage to a CLEC serving that ISP, SNET must compensate the CLEC for the termination of that traffic. In fact, the ISP is financially rewarded by the CLEC through either reduced rates or compensation. However, since ISPs do not originate traffic, the CLEC never compensates SNET. Thus all compensation flows one way.

The second problem occurs when a CLEC serves an ISP. The CLEC obtains NXXs from the same exchanges as the ISP currently uses. The NXX, however, is not terminated in the local calling area, it is terminated at the CLEC collocated space. From one location the CLEC can have multiple NXXs from all over the state terminate at its collocated space. This

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Comments of America On-Line, Inc. ".....it is clear that the migration of data traffic from the existing voice-oriented circuit-switched telephone network is crucial." page 16, Commenst of the Internet Access Coalition, page 14..

arrangement requires SNET to transport the local call over the public switched network, regardless of distance, to the CLEC. There are no additional charges to the CLEC for the use of SNET's facilities, and the CLEC has no increase in cost. In addition, because SNET is often unaware that the usage is related to the ISP service, it is even more difficult for SNET to take steps to avoid network congestion before it occurs

SNET stated in its initial comments that CLECs are pursuing ISPs to move their terminating traffic from the ILEC network to the CLEC network. Within the last few weeks, this has become a reality. SNET has recently been advised, by three different CLECS, that SNET should build additional network facilities in anticipation of usage originating over SNET's public switched network to the CLEC location. Upon further discussion with the CLECs, SNET has determined that these facilities are in anticipation of Internet traffic.[4] CLECs expect to either move existing usage or handle new ISP usage through their locations. In response to the CLEC expectations, SNET will need to install approximately 200 DS1s within a three month period. These facilities are not dedicated but part of the public switched network. Therefore, SNET incurs the expense of installing and maintaining these facilities. The 200 DS1s equate to 4,800 circuits capable of handling approximately, 70 million minutes of originating usage per month. Since this traffic is originating only, SNET could be liable to pay these CLECs approximately $3M per year in mutual compensation payments. In addition, SNET incurs additional cost in payments to the CLECs for the ordering and implementation of facilities to terminate calls to the CLEC.

[4] In this instance SNET was able to determine this intended use of the facilities, and so can plan accordingly. This is not the usual situation, however.

As SNET noted above, and will explain in Section IV of these Reply Comments, the ultimate solution is an overlay network designed for Internet traffic that is priced properly. In the meantime, SNET urges the Commission to except Internet traffic for mutual compensation. SNET understands that such an exception is technically possible, and it is appropriate as a short term "fix." Mutual compensation was not designed for this sort of situation, and its application exacerbates what is already a serious, and growing problem.

IV. AN OVERLAY NETWORK IS THE SOLUTION ALONG WITH PRICING CHANGES

The parties agree that a separate network to migrate the ISP traffic off the public switch network is needed. SNET is designing an Internet overlay network aimed at significantly reducing interoffice facility overloads on the public switched network. This overlay will also substantially reduce the switch congestion problems that exist at the end offices where ISPs connect today.

This dedicated Internet overlay network has several distinctive technical advantages. First, it migrates traffic off the existing interoffice trunk network (which was sized and optimized for voice traffic) to separate dedicated trunks used solely for Internet data traffic. These single purpose dedicated trunk groups can be carefully monitored for overflow allowing additions to be made as necessary in a timely manner. The public switched network interoffice network will thus no longer be subject to frequent unpredictable overflow conditions.

Second, the dedicated switches are sized to deal with the usage characteristics associated with Internet traffic. Given that these dedicated switches are trunk-to-trunk in

nature, they can be designed as essentially non-blocking, rather than compromised with the concentration ratios which are a part of every local end office today.

From an end-user's perspective, the voice network performance will be significantly decoupled from the effects of unpredictable spontaneous overload, resulting from a high number and long holding times of Internet data-type calls. The migration of ISP usage, off the local end office switches onto the dedicated Internet overlay switches, will substantially eliminate the slow dial tone occasionally experienced today by customers served by the same end offices as those serving the ISPs. Fast busy signals caused by facility overloads will also be substantially reduced as data traffic is migrated off the voice-call public switch network onto the dedicated overlay network.

ISPs will also benefit because they will no longer be subject to the effects of line concentration on their line-type connections that exist today. By migrating their connections to the overlay network on a T1 and/or PRI interface, ISPs can be assured that customers will be able to reach their modems, without being blocked in either the public switched network interoffice network or within the local end offices.

This solution is so critical that SNET is currently planning to implement the overlay, pending funding, despite the lack of an existing cost recovery mechanism. Contrary to the claims of ISPs that ILECs have no incentive to build alternative networks, SNET realizes that the public switched network must be protected.[5] SNET and other ILECs have stepped up to implementing solutions. The Commission must now do the same.

[5] Comments of tthe Internet Access Coalition, page 23.

V. THE COMMISSION NEEDS TO ESTABLISH CORRECT ECONOMIC SIGNALS

The Commission can, and must establish a cost recovery mechanism that will balance ILEC and ISP concerns. SNET proposes that the Commission require ISPs to use the packet switched data network, or in the alternative pay access charges for use of the public switched network. The network providers should identify the costs associated with their overlay networks and file new rates for use of that network under state and federal rules.

In adopting such a plan, the Commission need not be concerned that it will squelch an infant industry. The ISPs have themselves stated that they are in a very competitive market. The Commission's fourteen year transition plan includes (1) exclusion of access charges, (2) application of end user pricing, and (3) no regulation. Today we have a robust industry, an industry that consists of not only some small ISPs, but also ISPs owned by multimillion dollar companies such as AT&T, MCI, Microsoft, and others - hardly nonprofits. It is now time for the Commission to end the transition and require ISPs to contribute to the recovery of the costs they create on the ILEC network. These companies do not need to be coddled or subsidized.

In the short term, SNET requests the Commission to immediately correct the application of mutual compensation for ISP traffic. As SNET has indicated, (1) SNET's need to manage the unpredictable level of network congestion and (2) the opportunity for CLECs to "game" a regulatory process, can and should be corrected. In the long term, the Commission needs to make sure that the right economic incentives are established to maximize the use of the new data network.

VI. CONCLUSION

In summary, SNET believes that the Commission has before it enough information to immediately release an NPRM. The NPRM should propose (1) terminating the ISP exemption, and (2) alternative pricing structures for the new networks being developed. Because of the importance of these issues to the public switched network, SNET requests that the Commission resolve these issues by year end 1997. Should the Commission foresee an inability to resolve these issues quickly, SNET requests that in the short term, the Commission address the mutual compensation arrangements. The Commission's current pricing rules perversely motivate the ISPs and CLECs. The Commission's (1) treatment of ISPs as end users, and (2) the ISP exemption from access charges, fail to send the correct economic incentives. The lack of a usage based pricing structure for ISP traffic contributes to the congestion on the ILEC public switched network. The challenge before the Commission is to establish the correct economic signals. SNET encourages the Commission to act quickly given the increasing potential for serious overloads on the public switched network.

Respectfully Submitted,

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