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

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

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COMMENTS OF THE
UNITED STATES TELEPHONE ASSOCIATION

UNITED STATES TELEPHONE ASSOCIATION

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SUMMARY

Continued growth of the Internet and the public switched network depends on industry participants having the right incentives for investment and network use. As traffic from Internet usage has grown, USTA members have taken successful action to prevent degradations in service quality on the public switched network. Before the situation worsens, since Internet use is expected to grow, it is essential for the Commission to reform its present pricing policies for access to LEC networks. Internet service providers should not be required to pay access charges as currently constituted, but the current access charge system should not be maintained. Given the innately interstate and international nature of Internet traffic, these issues are squarely within the Commission's jurisdiction.

In keeping with efforts to replace the existing access charge regime with a market-based access framework, the Commission should adopt the principle that network users should pay market-based rates to recover the interstate network costs they incur. The Commission's current pricing policies, under which many Internet service providers pay flat rates to recover usage-sensitive costs, provide the wrong incentives for efficient network investment and development. The recent outages and delays in online services have resulted from the inability of the providers themselves to satisfy demand, in part because of pricing decisions they have made. The growth in demand for second lines provided by LECs to end users is a symptom of, not a cure for, the fundamental economic flaws in the existing pricing structure for Internet access.

The Commission should provide LECs the flexibility to price access for Internet service providers so that flat-rated elements could recover the LECs' fixed cost components while usage-based rate elements would recover usage-sensitive cost components. Such flexibility will promote rational use of, and investment in, LEC networks.

USTA believes that there is no need for the Commission or any other agency to regulate the operations of Internet service providers. However, Internet service providers and IXCs offer similar services and should pay similarly for the network costs they incur.

The Commission should conduct a negotiated rulemaking to implement the principles discussed above. The negotiation should focus on developing a market-based, flexible means of pricing access to the public network by Internet service providers and similar users. A key aspect of moving to cost-based pricing in this area must be the elimination of competitive advantage due to regulation.

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I. INTRODUCTION

The United States Telephone Association ("USTA") hereby submits initial comments on the notice of inquiry (the "NOI") released by the Commission in the above-captioned proceeding.[1/] USTA's members include approximately 1200 incumbent local exchange carriers ("LECs") that are directly affected by the Commission's actions in this docket. USTA members support wide availability of information services, the Internet, and improved access by the public to Internet services. In the Commission's Access Reform proceeding, USTA

[1/] *See Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Transport Rate Structure and Pricing, Usage of the Public Switched Network by Information Service and Internet Access Providers*, Notice of Proposed Rulemaking, Third Report and Order, and Notice of Inquiry, CC Docket Nos. 96-262, 94-1, 91-213, 96-263, FCC 96-488 (rel. Dec. 24, 1996) at paras. 311-318. Paragraphs 21-299 of the foregoing are a notice of proposed rulemaking on access charge reform. We refer to those paragraphs as the "Access Reform Notice" and the associated proceeding as the "Access Reform" proceeding.

demonstrated this commitment and proposed reforms to the access charge rules that would promote these goals, and the continued health of the public switched network.[2]

Many USTA members provide information and Internet access services, and many other members count the providers of such services as valued customers. As demand for access to the Internet has exploded, USTA members have made every effort to facilitate and simplify such access, especially for residential and small business customers. Because USTA members address many different aspects of customers' needs regarding the Internet and information services, USTA is uniquely situated to address the issues raised in the NOI.

The Commission plays a pivotal role in addressing these matters because of the innately interstate -- and, increasingly, international -- nature of Internet traffic, which is thus subject to the Commission's plenary jurisdiction. Even though many users dial only a seven digit number from their computers to access a nearby Internet service provider, the web sites and e-mail addresses they contact are often located throughout the nation or across the globe. The issues raised by the NOI are complex, in part because of the wide variety of services offered over the Internet. Internet service providers presently treated as "enhanced service

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[2] *See, e.g.*, Comments of USTA on the Access Reform Notice (filed Jan. 29, 1997) ("USTA Access Reform Comments") at 81-84.

providers."[3] Accordingly, the Commission does not regulate the operations of such providers, and they are treated as "end users" under the current access charge rules.

USTA sees no need for the Commission or any other agency to regulate the operations of Internet service providers. However, as a factual matter, services offered over the Internet are substitutes for the interstate voice and data services traditionally provided by interexchange carriers ("IXCs") and LECs. Internet service providers access the bulk of their customers through the facilities of LECs, as IXCs do. They may own transmission facilities or resell capacity provided by IXCs. Moreover, the volume of traffic carried by Internet service providers that connect to LECs is substantial and it is growing. Accordingly, in evaluating the record associated with this NOI, a major focus should be a reappraisal of the policies on how Internet service providers are charged for the network facilities they use, since such policies have a major effect on the level of network investment, and the quality of service provided, for the American public. Indeed, this very inquiry as to all access customers is at the heart of the Commission's efforts to reform the overall access framework.

Most fundamentally, USTA members seek to ensure the continued availability of reliable communications for *all* Americans, consistent with the LECs' ongoing regulatory obligations to serve the public. It is important to balance the continuing needs of the majority

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[3] *See Fact Sheet on The FCC, Internet Service Providers and Access Charges*, http://www.fcc.gov/Bureaus/Common_Carrier/Factsheets/ispfact.html (last updated Feb. 14, 1997). Similarly, Internet service providers are often assumed to be "information service providers." The Telecommunications Act of 1996 defines "information service" in terms similar to the Commission's definition of enhanced service. *Compare* 47 U.S.C. §153(41) (defining "information service") *and* 47 C.F.R. § 64.702(a) (defining "enhanced service").

of customers, especially residential and small business customers, who do not currently access the Internet, as well as the increasing number of businesses and individuals who use it.

One straightforward step to achieving such equity is for the Commission to adopt the principle that network users should pay market-based rates to recover the interstate network costs they incur. LECs should have flexibility in setting such rates. As USTA stated in the Access Reform proceeding, interstate information service providers should not pay access charges as currently constituted, but the current access charge system should not be maintained.[4] The Commission should act on the NOI quickly and move to a negotiated rulemaking that will eliminate inequities by reforming present pricing policies, under which many Internet service providers pay flat rates for usage-sensitive services.[5] As demonstrated in the attached affidavit of J. Gregory Sidak and Daniel F. Spulber (the "Sidak/Spulber Affidavit"), a result of these policies is that pricing signals for such providers fail to guide properly their purchasing decisions and to allocate resources in an efficient manner.[6]

Indeed, current patterns of Internet usage are demonstrating the inadequacies of present pricing policies. So far, USTA members have moved successfully to prevent increases in

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[4] *See* USTA Access Reform Comments at 81.

[5] *See MTS and WATS Market Structure*, Memorandum Opinion and Order, CC Docket No. 78-72, 97 FCC 2d 682, 711-22 (1983) (establishing exemption from access charges for enhanced service providers); *see also Amendments of Part 69 of the Commission's Rules Relating to Enhanced Service Providers*, CC Docket No. 87-215, 3 FCC Rcd 2631 (1989); *Amendments of Section 64.702 of the Commission's Rules*, Report and Order & Order on Further Reconsideration & Supplemental Notice of Proposed Rulemaking, 6 FCC Rcd 4524, 4534 (1991).

[6] *See* Attachment 1 hereto, *Affidavit of J. Gregory Sidak and Daniel F. Spulber*, CC Docket No. 96-263 (Mar. 24, 1997) at 25-35.

network traffic due to Internet use from degrading service quality on their networks.[7] USTA members will continue to make every effort to do so. Before the situation worsens, since Internet usage is expected to grow, reform of present pricing policies is necessary. Doing so will prevent substantial inefficiencies in LECs' investments to accommodate Internet traffic growth using the LECs' present and planned capacity.[8] Based on market conditions, LECs should have the flexibility to deploy network solutions suited to the data traffic that is becoming a major use of the public switched network.

The recent highly publicized outages and delays in online services have resulted from the inability of the providers themselves to satisfy demand, in part because of pricing decisions that they have made.[9] In particular, as discussed in detail in Section II below, the recent technical and service failures of America Online Inc. ("AOL") and the ensuing consumer complaints are a case study of the pitfalls of sending improper pricing signals by relying on flat-rate pricing for a usage-sensitive service.

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[7] *See* T. Stevens, Bell Atlantic, *Remarks at NARUC Internet Forum* (Feb. 22, 1997) ("The impact of rapidly emerging Internet traffic is not causing what some have characterized as `meltdown', but hot spots show up in almost random fashion that require emergency network build-outs.").

[8] The referenced studies have already been submitted to the Commission. *See* Letter from Joseph J. Mulieri, Bell Atlantic, to James Schlichting, FCC, July 10, 1996; Letters from Glen Brown, U S WEST, to James Schlichting, FCC, June 28, 1996, and Oct. 1, 1996; Letter from Kenneth Rust, NYNEX, to James Schlichting, FCC, July 10, 1996; Letter from Alan Ciamporcero, Pacific Telesis, to James Schlichting, FCC, July 2, 1996, and attachments thereto.

[9] *See, e.g.*, David S. Hilzenrath, *At This Rate, They'll be Swamped; How Fixed Fees on the Net Make for Second Thoughts and Some Sore Users*, Wash. Post, Jan. 24, 1997, at D1 ("*At This Rate, They'll be Swamped*") ("America Online's woes are largely the result of its own miscalculations, as the company tells it.").

The Commission, information service providers, and telecommunications carriers (including USTA members) should heed the lessons taught by such failures in developing efficient and equitable pricing rules for access by Internet service providers. The challenge for all parties is to evolve existing networks from designs optimized for voice traffic to networks that more efficiently handle data traffic. The evolution from circuit switching to packet networks will be far from smooth, however, if Internet users and providers can maintain a circuit switched connections for two minutes or two hours and pay precisely the same amount in each case, as is common today.

II. GROWTH OF THE INTERNET AND THE PUBLIC SWITCHED NETWORK DEPENDS ON PROPER INCENTIVES FOR INVESTMENT AND USE

To the extent that the Commission's current pricing policies permit Internet service providers and others to pay flat rates for the usage-sensitive interstate costs they incur, such policies provide the wrong incentives for efficient and equitable development of the public network, as well as the Internet.

Continuing technological innovations could well provide a long-term solution to any congestion issues. Such innovations depend on economically viable and sustainable pricing policies that would provide incentives for widespread deployment of more efficient technologies. But, without the necessary changes, it is clear that the incumbent LECs' circuit-switched networks will be the main access point for Internet use by most Americans.

Accordingly, a more economically rational means for LECs to price Internet access must be adopted to reflect the demands placed by Internet traffic on the LEC networks.

As long ago as 1982, in adopting the basis for the current access charge structure, the Commission recognized that:

> Economics teaches us that, except in certain circumstances involving market failure, prices equal to the cost of producing another increment of a good, i.e., equal to the marginal cost of production, are optimal. Provision of telephone services involves two marginal costs. One varies with the traffic level. The other varies with the number of access lines demanded. For this reason, efficient pricing requires both usage sensitive and non-usage sensitive charges for recovery of access costs.[10/]

As the attached reports show, costs incurred by Internet service providers in connecting to the networks of LECs are usage-sensitive as well as fixed. Indeed, as the Sidak/Spulber Affidavit shows, the current exemption from access charges for enhanced service providers, as applied to Internet service providers, results in a zero price for data transmission, and as such is an inefficient subsidy of these providers.[11/] Of course, under the present access charge system, usage-sensitive access charges recover some non-traffic-sensitive ("NTS") costs, and provide subsidy for NTS loop costs, as well. When economically rational, market-based reform of this system takes place, as USTA has urged, reform for Internet service providers will be much easier to achieve.

Established economic principles, as well as longstanding FCC policies, demonstrate that usage-sensitive costs of accessing LEC networks should be recovered in a usage-based

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[10/] *See MTS and WATS Market Structure*, Third Report and Order, CC Docket No. 78-72, 93 FCC 2d 241 (1983) at para. 27 (footnotes omitted).

[11/] *See* Sidak/Spulber Affidavit at 41-43.

manner.[12] By matching the demand for and supply of voice and data services, such pricing will help ensure that LECs, Internet service providers, and their end users make efficient investment decisions. If the customers of LECs, such as Internet service providers, pay flat rates to recover network costs that have both usage-sensitive and fixed cost components, relatively light users of such services will subsidize heavier users, and both efficiency and equity will be impaired. This problem is exacerbated since the flat rates now charged are based on wholly different network usage paradigms than associated with online services.

The Commission's current pricing policies are causing a misallocation of investment, by providing incentives for information service providers -- and particularly Internet service providers -- to connect to and use the circuit-switched networks of incumbent LECs through flat-rated services that have both fixed and usage-sensitive cost components. Incumbent LECs' investments to meet this demand largely have been to expand existing circuit-switched facilities, which is not the most efficient long-term solution to the related growth in traffic.

A pricing structure that is comprised of flat-rated elements to recover fixed cost components and usage-based rate elements for usage-sensitive cost components would provide the correct economic signals for Internet service providers' usage of LEC networks.[13] It will also provide appropriate incentives for LECs to invest in technologies, such as packet switching, that meet Internet service providers' needs. USTA members have demonstrated

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[12] *See id.* at 37-41.

[13] *See id.* at 37-39.

that they are seeking new technological means of meeting Internet-related demand.[14] However, widespread deployment of such new technologies should be based on meeting the needs of Internet service providers efficiently, not on "quick fixes" due to unprecedented calling volumes.

America Online: A Case Study in Inefficient Pricing

AOL's well-publicized difficulties in serving its subscribers are an example of the inefficiencies and improper economic signals that result from non-cost-based pricing. AOL's poor customer service has been the result of its own inefficient flat-rated pricing practices and the strains they placed on its system.[15] In early December, 1996, AOL began offering subscribers unlimited use of its Internet access service for $19.95 a month, as an alternative to its previous practice of charging subscribers for usage on an hourly basis after they exceeded a threshold number of online hours.

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[14] *See, e.g.*, David Kopf, *Nipping 'Net calls in the bud*, America's Network, Mar. 1, 1997, at 48 (describing SBC's Internet/Intranet Transport Service). *See also* Clint Swett, *Pac Bell Plans High-Speed Internet Lines*, Sacramento Bee, Jan. 22, 1997, at C1 (proposing new data transmission and modem pooling arrangements); V. Vittore, *ADSL Begins Another Chapter In Internet Access*, Cable World, Mar. 17, 1997, at 70 (noting GTE's interest in asymmetrical digital subscriber line ("ADSL") technology); *Lucent Technologies Inc. -- Ameritech Orders Devices to Ease Phone Congestion*, Wall St. J., Mar. 20, 1997, at B4.

[15] *See* Kevin Maney, *Web in Crisis? Gridlock on info highway*, USA Today, Jan. 20, 1997, at 1B ("At AOL, engineers are racing to fix the service's capacity problem, which has nothing to do with jams in the phone system and everything to do with what AOL's computers, routers and data lines can handle."); *see also*, *At This Rate, They'll Be Swamped*, *supra* note 9.

As is well known, AOL subscribership increased, and those subscribers who were able to gain access to AOL began remaining online substantially longer than before AOL adopted flat-rate pricing.[16] The overall result was that subscribers experienced major delays and busy signals in attempting to gain access to AOL's facilities. As one report noted,

> You don't have to be an economist to know that when people don't pay extra for something, they often use more of it, generating shortages. AOL subscribers have found that to be the case.[17]

The increased usage strained the reliability of AOL's system as well. On January 23, 1997, an AOL power failure prevented its subscribers from receiving e-mail for two hours. The outage occurred when AOL installed new computer hardware "to increase AOL's capacity to handle the surge in new usage."[18]

AOL subscribers were so dissatisfied that in January 1997, the attorneys general of over 36 states threatened AOL with lawsuits for alleged false advertising and fraud.[19] In late

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[16] *See* David S. Hilzenrath, *Online Overload Prompts AOL To Ask Customers to Ease Up*, Wash. Post, Jan. 17, 1997, at A1 (stating that during the last three months of 1997, AOL added 1.2 million subscribers, and that the number of hours that users spend online daily "jumped" to 4.2 million for January 1997, compared to 1.5 million in September 1996). *See also At This Rate, They'll Be Swamped*, *supra* note 9 ("The amount of time the average AOL subscriber spends on line daily has doubled since September [1996], rising to 32 minutes from 14 minutes.").

[17] *At This Rate, They'll Be Swamped*, *supra* note 9.

[18] *See* David E. Kalish, *America Online Suffers E-Mail Glitch As Customers' Frustrations Increase*, N.Y. Times CyberTimes, http://search.nytimes.com/web/docsroot/library/cyber/week/012497aol.html (Jan. 24, 1997).

[19] *See, e.g.*, Gregg Stein, *New York Threatens to Sue America Online*, N.Y. Times CyberTimes, http://search.nytimes.com/library/cyber/week/012597aol-vacco.html (Jan. 25, 1997); David S. Hilzenrath and Jennifer Ordonez, *AOL to Give Refunds to Subscribers; Online*

(continued...)

January, AOL settled its dispute with the state attorneys general by agreeing, among other things, to offer refunds to subscribers and to suspend most of its advertising during February 1997.[20] AOL has since added 50,000 computer modems and leased additional modem and transmission capacity to cut down on the service problems experienced by its subscribers.[21] AOL thus is incurring the volume-driven costs of acquiring additional modems in order to address the service problems caused by its flat-rated, usage-insensitive pricing scheme. Although AOL has not indicated that it will alter its flat-rated, "unlimited use" rate structure, other Internet service providers have done so,[22] and industry participants are skeptical about the long-term viability of such plans:

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[19](...continued)
Service Settles With 36 States Over Computer Congestion, Wash. Post, Jan. 30, 1997, at A1 ("*AOL to Give Refunds*"). Several groups of subscribers also sued AOL, seeking damages because of alleged fraudulent claims by AOL regarding "unlimited access" to its services. *See* Therese Poletti, *AOL Hit With More Class-Action Suits*, N.Y. Times CyberTimes, http://search.nytimes.com/library/cyber/week/011697aol.html (Jan. 16, 1997).

[20] *See In the matter of America Online*, Assurance of Voluntary Compliance, http://www.oag.state.ny.us/aol.html, (reporting agreement entered into by the Attorneys General of various states and commonwealths and America Online Inc.) (entered Jan. 29, 1997). *See also AOL to Give Refunds*, *supra* note 19.

[21] *See A Community Update from Steve Case*, AOL (online message Mar. 4, 1997) on file with USTA; Steve Lohr, *America Online, Posting Loss, Speeds Plan to Raise Capacity*, N.Y. Times CyberTimes, http://search.nytimes.com/library/cyber/week/020797aol.html (Feb.7, 1997).

[22] *See At This Rate, They'll Be Swamped*, *supra* note 9 (reporting that (i) in November 1996, CompuServe Inc. halted an experimental flat-rate pricing program, since it proved costly when many sophisticated heavy users subscribed to take advantage of the price, and (ii) in December 1996, another Internet service provider, NetCom On-Line Communication Services Inc., stopped offering a fixed-rate service to new customers.).

> "I just can't imagine this flat-rate pricing lasting," said John Sidgmore, chief executive of UUNet Technologies Inc., a Fairfax company that provides Internet services. "I think it's going to be usage-sensitive, and customers will pay more for what they use." Until users pay for what they get, some analysts say, the Internet may have a hard time maturing from an erratic Soviet-style system of surpluses and shortages to a smoothly functioning economic machine where supply matches demand.[23]

* * *

Of course, there are substantial technical, operational, and capacity differences between the networks of LECs and AOL's facilities. Because incumbent LECs' networks have been designed conservatively and with substantial redundancy to serve the needs of all residential and business users in their service areas, they are quite robust.

Moreover, unlike AOL, USTA members are legally obligated as incumbent LECs to maintain their readiness at all times to provide reliable service to the public. More importantly, USTA members have a century's worth of experience in meeting their customers' needs and fulfilling the expectations of the American public for high quality, dependable service. They would not permit service to change from that high standard, at least without a great deal of warning. As a result, USTA members actively seek to avoid the types of problems that plagued AOL's subscribers. Both efficiency and equity require that LECs be permitted to recover their network costs from cost causers in a manner that facilitates their continued high quality of service to residential and small business users, as well as information service providers and IXCs.

Even with the increased calling volumes and longer holding times that have occurred on LEC networks as LEC customers have increasingly accessed the Internet, there have been no

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[23] *Id.*

Internet-related service failures of an incumbent LEC in any way comparable to AOL's. Despite these differences, the lesson should be clear: if regulators dictate non-cost-based pricing rules, they create inefficiency that can directly harm consumers. Consistent with their obligations as incumbent LECs, USTA's members will work diligently to provide affordable and reliable service to all customers, including Internet service providers.

Recent growth in demand for "second lines" provided by LECs to end users is a symptom of, not a cure for, the fundamental economic flaws in the Commission's existing pricing structure for Internet access. The current lack of usage-based pricing promotes misallocation of resources and inefficient use of the local circuit-switched network. Increased use of these additional lines does not cure the fundamental problem imposed by non-cost-based pricing of Internet access.

Some claim that the fact that LECs increasingly are offering second lines to residential users demonstrates that there are no cost recovery issues associated with pricing policies for Internet service providers. According to these critics, revenues from "second lines" allegedly more than compensate LECs for the impact of Internet traffic on the network.[24]

To the contrary, the increased use of second lines is an indication that large amounts of additional traffic are being carried on the incumbent LECs' circuit switched networks, adding to potential congestion and associated investment issues. For the Commission to rely on the

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[24] *See* Lee L. Selwyn & Joseph W. Lazlo, *The Effect of Internet Use on the Nation's Telephone Network*, Internet Access Coalition Report, http://www.internetaccess.org/eti_toc.htm, Jan. 22, 1997, chap. 3 ("*The Effect of Internet Use*"). These and related contentions are discussed in Attachment 2 hereto, Robert F. Austin, *On the Adverse Effects of Continuing Temporary Cost Subsidies to the Commercial Internet Service Industry* (Mar. 24, 1997) (the "Austin Report") at 32, 35-45.

presence of second line revenues as a justification for maintaining its current pricing policies would be to recognize a *de facto* implicit subsidy from such revenues to Internet service providers.[25]

The rise in demand for additional lines and the revenues associated with them cannot be directly correlated to Internet usage. According to Bell Atlantic, less than one-half of the additional lines ordered by its customers are in fact for Internet use. The majority of such lines are for facsimiles and voice grade service for additional family members, as well the burgeoning rise in home-based businesses.[26] To the extent that such lines are used for Internet access, they are not being used for toll or so-called vertical services and do not produce revenues from such services.

Indeed, reliance on second line revenues as sources of revenue to cover Internet- related costs is misplaced because of emerging local exchange competition. Competitive local exchange carriers now have the opportunity to engage in competition by providing such lines at TELRIC-based prices, through resale or the use of the unbundled network elements. As a result, claims that revenues from incumbent LECs' offerings of second lines are the "magic bullet" to recover the costs incurred by Internet service providers do not recognize the advent, or effects, of local exchange competition.

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[25] *See* Sidak/Spulber Affidavit at [52-62].

[26] *See Internet Becomes Focus Of Face-Off*, Telephony at 88 (Feb. 3, 1997). Even the president of the Information Technology Association of America, which co-sponsored *The Effect of Internet Use*, admitted that "We can't be 100% certain of the correlation." *Id.*

III. INFORMATION SERVICE PROVIDERS OFFER SUBSTITUTES FOR TELECOMMUNICATIONS SERVICES OFFERED BY INTEREXCHANGE CARRIERS AND LECS, AND SHOULD PAY THE COSTS THEY INCUR

USTA supports the continued unfettered development of the Internet. The Commission should maintain its sound course of refraining from regulation of Internet service providers and avoid comprehensive regulation of the activities of information service providers. However, because of the similarities in the services offered by Internet service providers and IXCs and the similar types of LEC network costs that these firms incur, the Commission should provide flexibility to LECs to price access for Internet service providers in a manner similar to that for IXCs. Doing so will promote rational use of, and investment in, LEC networks.

Internet service providers already offer substitutes for interstate telecommunications services provided by IXCs and LECs. For example, e-mail using the Internet clearly is a substitute for some voice calls and facsimiles traditionally carried over the facilities of traditional IXCs.

Full duplex voice service over the Internet -- so-called Internet telephony -- is also becoming increasingly available and convenient. A focus of marketing for such services is their avoidance of traditional long distance charges. For example, Latic Communications, Inc., has announced a service that claims to offer Internet calling between Tokyo and Washington, D.C. for voice and fax traffic, promising a 50% discount off "phone rates" and a

domestic long distance rate of 5-6 cents a minute.[27] Significantly, the party originating the call will be able to use a standard telephone to dial into the Internet and speak, listen or transmit facsimiles over the Internet. Another firm, VocalTec, Inc., promotes a "gateway" for Internet telephony that offers unlimited long-distance phone-to-phone calling for the flat-rate price of an Internet connection. The company claims that by using state-of-the art technologies, customers can use the Internet and dramatically reduce their long-distance rates for national and international calls.[28] Explicit in VocalTec's plan is that users substitute of the Internet for IXC transport.

These service providers are not alone. One survey of Internet telephone directories reveals that at least 17 other companies are pursuing similar business approaches.[29] Companies such as FreeTel Communications, Inc. and the Global Exchange Carrier Company, Inc., specifically promote the global reach of the Internet as a substitute for IXC transport, noting, for example, that "you do not incur any long-distance telephone charges. Your expenses are limited to what you already pay for your Internet connection."[30]

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[27] *See Latic Communications; What's New Web Page; Phone Calling On The Internet; Unprecedented New Technology to Slash Phone Rates by 50% Between Tokyo, Washington, DC and San Jose, CA*, http://www.latic.com/newsrls.htm (Jan. 30, 1997).

[28] *See VocalTec Telephone Gateway Home Page*, http://www.vocaltec.com (Mar. 7, 1997).

[29] *See InterActive Internet Telephone Directory Home Page*, http://www.iact.com/iaintern.htm) (Mar. 7, 1997).

[30] FreeTel, *Talk over the Internet for Free!*, http://www.freetel.com. (Mar. 7, 1997).

Moreover, the Voice Over Internet Protocol (VoIP) Forum is a group of 40 computer and telephony vendors seeking to promote use of the Internet as a substitute for service by traditional IXCs. In addition to software companies such as VocalTec, Voxware and Microsoft, other members include Cisco Systems, Dialogic and 3Com. These and other firms are promoting Internet telephony, in part as a way for consumer to avoid the more expensive rates of IXCs.

In reforming regulation for the future, the Commission must recognize the reality and the future effects of Internet telephony. The current economics of Internet access permit consumers to dial local numbers in order to place essentially free, unlimited interstate and international telephone calls for voice and transmittal of facsimiles and well as e-mail. This economic model simply is not sustainable.[31/]

Computer-based facsimile traffic over the Internet is also a substitute for interstate faxes sent via traditional IXCs, with potentially substantial impacts on revenues to LECs and IXCs. A recent study indicates that, after use of postal mail, facsimile traffic is the most frequently used business-to-business medium.[32/] A survey of Fortune 500 companies revealed that each

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[31/] Some respected industry participants acknowledge that Internet service is a substitute for long-distance telephony and apparently view such service as a means of rationalizing telephone pricing. *See, e.g.*, Bill Gates, *The Road Ahead*, rev. ed. 120-21 (1996) ("In effect, overpriced long-distance service has subsidized underpriced local service. But to the degree that long-distance phone calls are replaced by the new form of communication on the Internet, the telephone companies will lose the subsidy for the loss-making local service.").

[32/] *See Facts on the Cost Appeal of Internet Fax*, Computer Finance, No. 8, Vol. 7, Jan. 1, 1997.

of the companies' facsimile machines is used to transmit up to 4,000 pages per month.[33] Facsimiles transmitted direct from personal computers to recipients via the Internet are substitutes for such usage, and the traffic is not limited only to computers. Devices are now retailing for less than $200[34] that are designed to be attached to traditional fax machines, with an installed base of 86 million machines,[35] in order to route the traffic over the Internet. Under current Commission pricing policies, using the Internet to send this traffic makes each transmission -- regardless of whether it is interstate, local, or international -- free of charge.

Internet companies are developing software tools for both voice telephony and facsimile traffic which will effectively create virtual networks on the Internet that will be structurally similar to the traditional public switched network. However, billing for Internet telephony over these virtual networks will be based on economically rational, usage-based pricing.[36] This is in stark contrast to the flat-rated schemes of AOL and others to attract Internet subscribers, as well as the Commission's current pricing policies. In those areas where the

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[33] *See Id.*

[34] *See TAC Systems Announces FAXportal*, PR Newswire, Feb. 25, 1997.

[35] *See Id.*

[36] In 1996, a software-based switching architecture and management technology was introduced that provides a usage-based billing model for the Internet similar to that deployed for traditional long distance and international calls. The Real Time Messaging Protocol ("RTMP") is analogous to the infrastructure paradigm of the LEC networks and their central offices as well as private branch exchanges. *See Internet Xchange for FAX Earns AFAXA 1997 Best of Fax Honors*, Business Wire, Jan 23, 1997. RTMP is designed for transmission over fluctuating Internet bandwidth by establishing peer-to-peer connections between servers, and using signalling, buffering and compression to maintain a connection and prevent re-transmission of packets. The protocol has an embedded encryption mechanism to prevent eavesdropping.

Internet is used as a substitute for the services of IXCs and LECs, it should be governed by the same pricing requirements.

For voice and facsimile applications, as well as e-mail, Internet service providers play a role directly analogous to IXCs handling interexchange voice and facsimile traffic. Both Internet service providers and IXCs rely on the LEC network for both the origination and termination of these transmission. From the perspectives of LEC traffic engineering and operations, Internet-based services require the same type of support as those of IXCs.

Unlike IXCs, however, Internet service providers pay LECs only a flat rate for the use of their network to handle and deliver this traffic. Such a regulation-based free ride will have a significant competitive impact and distort the ability of prices to signal efficient allocation of resources.

As a matter of law, Internet service providers transmitting facsimile and voice telephony also meet the definition of "telecommunications carrier" in the Telecommunications Act. A telecommunications carrier is defined as "any provider of telecommunications services" (except for aggregators), and it is to be treated as a common carrier to the extent that it is providing telecommunications services.[37]

Internet telephony and facsimile services are examples of "telecommunications services," which are defined as "the offering of telecommunications for a fee directly to the public, or to such class of users as to be effectively available directly to the public, regardless

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[37] *See* 47 U.S.C. § 153(44).

of the facilities used."[38] Use of the Internet to send facsimiles or place voice calls for a fee, whether flat or usage-based, clearly falls within this definition, since "telecommunications" means the "transmission, between or among points specified by the user, of information of the user's choosing, without change in form or content of the information as sent and received."[39] Users are permitted to choose the destination of their facsimiles or telephone calls. Internet service providers handle the data using the TCP/IP protocol, which does not change the data's form or content. Internet service providers deliver the packets to points specified by the user.

Thus, the Telecommunications Act underlines the legal similarities of services offered by Internet providers and their substitutes carried by IXCs.[40] USTA believes that this is an additional basis for addressing the substantial pricing and competitive distortions caused by current pricing policies that differentiate between IXCs and Internet service providers.

IV. REFORM OF THE ACCESS CHARGE RULES SHOULD INCLUDE REFORM OF LECS' CHARGES FOR INFORMATION SERVICE PROVIDERS

In light of the important issues raised by the growth of the Internet, USTA recommends that the Commission establish in the Access Reform proceeding[41] the principle that interstate

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[38] *Id.*, § 153(46).

[39] *Id.*, § 153(48).

[40] Of course, Internet service providers offer other services, including database retrieval and Web page maintenance and interaction, which may not necessarily be subject to the same analysis.

[41] *See supra* note 1.

network users -- including Internet service providers -- should pay for access to and use of LECs' networks based on the network costs they incur. Thus, for example, if an Internet service provider incurs usage-based costs, it should pay on a usage basis for those portions of the network that are usage-sensitive, and it should cover the costs that it incurs. Moreover, users, such as Internet service providers and IXCs, that incur network costs in similar ways should be charged on the same basis. Implementation of this principle will provide incentives for efficient use of the public switched network and the development of innovative services.

Once this cost-based principle is established, the Commission should establish how to apply it to Internet service providers and other similarly-situated users through a negotiated rulemaking building on the record compiled in this NOI. The negotiation should focus on developing a market-based, flexible means of pricing access to the public network by Internet service providers and similar users. The Commission should seek participation from all interested parties or their representatives. USTA recognizes that multiple factors should be weighed, including possible "rate shock" to Internet service providers and others, as well as technical constraints on the operations of those providers, which may not be designed for usage-based prices. Similarly, factors such as increasing congestion and traffic growth, as well as network reliability, must be considered.

A key aspect of moving to cost-based pricing in this area must be the elimination of competitive advantage due to regulation. For example, at present, competitive local exchange carriers that provide serving wire center service to major information service providers may attempt to obtain significant termination revenues for inbound interstate traffic to these