THE END OF THE BEGINNING: THEORIES AND PRACTICAL ASPECTS OF RECIPROCAL COMPENSATION FOR INTERNET TRAFFIC

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Now this is not the end.
It is not even the beginning of the end.
But it is, perhaps, the end of the beginning.¹

Federal Communications Commission Chairman William E. Kennard appropriately paraphrased these words in discussing the Commission’s action addressing reciprocal compensation for traffic to internet service providers.² The FCC’s action in this arena begins the long road ahead in revamping the communications regulatory system to incorporate the many changes that internet developments necessitate.

No advancement in technology will change the face of telecommunications more than the internet, a “unique and wholly new medium of worldwide communication.”³ Working with a regulatory structure designed to address the separate functions of telecommunications and broadcasting, the FCC in its new role must accommodate a technology that will truly bring about the convergence of communications. Nothing embodies the troubles ahead more than the current controversy over the correct method of compensation for the carriage of internet traffic.

When the Telecommunications Act of 1996 (“1996 Act” or “the Act”) opened the local telephone market to competition, it necessitated major changes to the telecommunications industry in the United States.⁴ Competition in local exchange access brought with it such problems as who pays whom for carrying local traffic and how such payments be arranged. The solution seemed to be reciprocal compensation arrangements, which provide compensation to a local exchange carrier for completing a local call placed by a competing carrier’s customer.⁵ However, an issue has arisen over the proper classification of internet traffic under the agreements. Specifically, must local exchange carriers (“LECs”) compensate each other for traffic to internet service providers (“ISPs”), and if so, how?

Although the FCC recently issued a ruling that ISP traffic is inherently interstate, it has not specified how LECs should be compensated for the traffic.⁶ This has only further complicated the matter. Failing to allow adequate compensation for carriage of ISP traffic will remove an incentive to carry the traffic, raise the price to customers and ultimately interfere with the development of the internet as a viable communications medium.


⁷ In the past, individual media forms were uniquely coupled with specific infrastructure, for example, voice telephony over the copper-wire telephone network, broadcast over airwaves and cable television over the coaxial cable network. See FCC, OPP WORKING PAPER 29, DIGITAL TORNADO: THE INTERNET AND TELECOMMUNICATIONS POLICY (authored by Kevin Werbach), at 5 (1997) [hereinafter DIGITAL TORNADO]. Convergence indicates that those distinctions are blurring. Digitalization of data means “all of the formerly distinct content types are reduced to a stream of binary ones and zeroes,
tional equivalents will only further the complicating effects of convergence on communications regulation. A decision on the issue at stake may involve not just interconnection agreements between carriers, but the very nature of the internet and what form future regulation of this medium and all others will take.

This note outlines the technological structure of ISP traffic utilizing the public switched telephone network ("PSTN"). It provides a background of the applicable local competition provisions of the 1996 Act, including the interconnection requirement and the mandate for reciprocal compensation. It discusses the controversy over the payment of reciprocal compensation fees for ISP traffic and reviews case law and public utility commission decisions regarding the issue. The note then examines the FCC's past and prospective treatment of internet traffic and discusses proposed solutions in search of a result that will hold up in the coming convergent communications environment.

I. THE INTERNET AND THE PSTN

Although the FCC does not regulate the internet itself, the network access portion of internet service is brought under the Commission's jurisdiction by its use of the public switched telephone network to convey data among its constituent networks and to the end user. However, information on the internet traverses the telecommunications infrastructure in a manner that is far different from traditional voice transmissions over the PSTN.

A. Transmission of Internet Data Over the PSTN

The internet is comprised of many interconnected networks of computers, to which an end user obtains access via an ISP. When an end user initiates a local telephone call to an ISP served by a competing carrier, the call is conveyed through a switch belonging to the end user's carrier. It then travels to a point of interconnection established between that carrier and a competing carrier upon whose network the ISP operates. The competing carrier then transports the call to the ISP, which routes the call over the internet to the databases and websites visited by the end user. Internet data is transmitted digitally through packet-switching technology, traveling over a network consisting primarily of copper

which can be carried by any delivery platform." Id. Regulatory structures dependent upon these distinct content types often cannot be adapted to service offerings that cross traditional boundaries.

The PSTN is the traditional, circuit-switched, copper-wire telecommunications network. See Dennis W. Moore, Jr., Regulation of the Internet and Internet Telephony Through the Imposition of Access Charges, 76 Tex. L. Rev. 183, 184-85 (1997). This network consists of connections between callers via networks provided by local exchange companies. See Christopher Libertelli, Internet Telephony Architecture and Federal Access Charge Reform, 2 B.U. J. Sci. & Tech. L. 13, para. 5 (1996). Interexchange companies then provide connections between local exchange networks for long-distance service. See id.

See Digital Tornado, supra note 7, at 21. As of spring 1999 there were 4,000 internet service providers in the United States. See Noreen Seebacher, Plug into the world via the internet, The Detroit News, Apr. 12, 1999, at E1.

See Reno v. ACLU, 541 U.S. at 849. "The internet is a international network of interconnected computers." Id. It enables millions of people to communicate and access vast amounts of information from around the world. See id. The internet is an outgrowth of the ARPAnet, a military program designed to enable computers operated by the military and other defense-related organizations to communicate with each other even if some portions of the network were destroyed. See id. The internet grew out of related civilian networks that eventually linked with each other to expand to its current size of roughly 29,670,000 host computers. See Weaving an Ever-Wider Web, ASIAWEEK, Mar. 5, 1999, at 8.

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11 Internet access providers can be categorized according to the type of service they provide. Network Service Providers offer direct access via a dedicated telecommunications circuit running from the ISP's backbone to a customer's site or local area network. See Haran Craig Rashes, The Impact of Telecommunications Competition and the Telecommunications Act of 1996 on Internet Service Providers, 16 Temp. Envtl. L. & Tech. J. 49, 57-58 (1997). Online Service Providers offer dial-up access via modem and provide proprietary content to their subscribers in addition to access to the internet. See id. Internet Service Providers ("ISPs") offer dial-up access directly to the internet with no proprietary content. See id.

12 See Reciprocal Compensation Ruling, supra note 6, at para. 7. 

13 "[A]n originating LEC end user's call to an ISP served by another LEC is carried (1) by the originating LEC from the end user to the point of interconnection (POI) with the LEC serving the ISP; (2) by the LEC serving the ISP from the LEC-LEC POI to the ISP's local server; and (3) from the ISP's local server to a computer that the originating LEC end user desires to reach via the [internet]." Id.

14 Packet switching transmits information by dividing it into small pieces of data, the "packets," that are individually routed over the most efficient path through the network to the destination. See In re Complaint of Time Warner Communications of Ohio, L.P. v. Ameritech Ohio Regarding the Payment of Reciprocal Compensation, Case No. 99-308-TP-CSS, Opinion and Order, at 4 <www.puc.state.oh.us/docket/Orders/index.htm> (Ohio Pub. Serv. Comm'n Oct. 14, 1998) [hereinafter Ohio PSC Decision].
cable or fiber-optic connections leased from telecommunications companies.\footnote{15} Most customers connect to the internet using a computer and modem\footnote{16} to place a local call\footnote{17} over a standard voice-analog telephone line to the ISP’s point of presence within the customer’s calling area.\footnote{18} The call is routed to a “dial-in site,” generally a small physical location that contains the electronic equipment needed to connect the end user’s call to the ISP’s host computer.\footnote{19} Each ISP host computer connects via the PSTN and dedicated circuits to a local area network that is connected in turn to a wide area network.\footnote{20} These networks are then interconnected with each other by one of several internet “backbone” infrastructures consisting primarily of dedicated, packet-switched telecommunications circuits.\footnote{21} An ISP serves to connect the end user to this “network of networks.”\footnote{22} With that connection made, the end user can send and receive data from the internet over an LEC’s copper or fiber-optic telephone lines.\footnote{23}

Most end users pay a flat monthly fee to their ISP for internet access.\footnote{24} ISPs are able to charge flat rates for the service because the access charge exemption, discussed later, allows them to purchase business lines from their LEC at local tariffs with no per-minute charge for incoming calls.\footnote{25} End users pay their own LECs for the connection under the terms of their generally flat-rate local telephone service fee.\footnote{26} The typical payment scenario for end-user access to the internet, therefore, includes a flat payment to the ISP and a monthly telephone bill, making usage charges nonexistent in the internet access market.\footnote{27} Any change in this system will indirectly raise customer prices by making it impossible for ISPs to charge flat rates to the end user if they are required to pay by the minute for the local access lines their customers use to connect to the internet.

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  \item[ootnote{15}] Service, Report to Congress, 13 FCC Rcd. 11,501, 11,552, para. 64 (1998) [hereinafter Universal Service Report to Congress].
  \item[ootnote{16}] See Rashes, supra note 11, at 54.
  \item[ootnote{17}] A modem (modulator-demodulator) is a device used to convert digital data into analog signals that can be conveyed over standard phone lines. See Rashes, supra note 11, at 57 n.70.
  \item[ootnote{18}] Customers dial a seven-digit number to access the facility and pay only local rates for the call. See Illinois Bell Tel. Co. v. WorldCom Technologies, Inc., No. 98 C 1925, 1998 U.S. Dist. LEXIS 11,344, *16 (N.D. Ill. July 21, 1998). Because local calls are billed at a flat rate, a connection to a local dial-up ISP incurs no charge regardless of its duration. See Rashes, supra note 11, at 71.
  \item[ootnote{19}] See Rashes, supra note 11, at 54. An ISP establishes a point of presence, consisting of a host computer, a terminal server and a modem pool, by purchasing dial-up lines to the PSTN in each local calling area. See Padmanabhan Srinagesh, Internet Cost Structures and Interconnection Agreements, Toward a Competitive Telecommunications Industry, SELECTED PAPERS FROM THE 1994 TELECOMMUNICATIONS POLICY RESEARCH CONFERENCE 251-53 (Gerald W. Brock ed., 1995). ISPs with a customer base over several local calling areas will establish a modem pool point of presence in each area to provide all customers with a local number to dial to access the internet. See Rashes, supra note 11, at 54.
  \item[ootnote{20}] See id. at 54. A local area network (“LAN”), usually encompassing only an office or building, consists of several PCs networked to share files and computer equipment and exchange e-mail. See maranGraphics, Computer Dictionary (visited Mar. 18, 1999) <www.maran.com/dictionary/index.html>. A wide area network (“WAN”) operates in the same way but encompasses a much larger geographic area, such as a city or country. See id.
  \item[ootnote{21}] See Rashes, supra note 11, at 54.
  \item[ootnote{22}] See Srinagesh, supra note 18, at 252-53.
  \item[ootnote{23}] See DIGITAL TORNADO, supra note 7, at 12. In the alternative, end users may subscribe to one of a variety of high-speed access technologies to obtain a dedicated connection between the customer premises and the internet. See id.
  \item[ootnote{26}] As a result of [the enhanced services exemption from access charges], ESPs [enhanced service providers—a class of users that encompasses ISPs] may purchase services from incumbent LECs under the same intrastate tariffs available to end users, by paying business line rates and the appropriate subscriber line charge, rather than interstate access rates. Those business line rates are significantly lower than the equivalent interstate access charges, in part because of separations allocations and the access charge per-minute rate structure, and in part because the business lines that ESPs now purchase generally do not include usage-sensitive charges for receiving local calls. ESPs, consequently, typically pay incumbent LECs a flat monthly rate for their connections regardless of the amount of usage they generate.
  \item[ootnote{27}] See id.
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II. LOCAL COMPETITION, INTERCONNECTION AGREEMENTS AND RECIPROCAL COMPENSATION

The 1996 Act was intended to bring competition to the local exchange market, "through a pro-competitive, deregulatory national policy framework."28 The Act eliminates barriers to entry by providing new entrants into local exchange markets with access to the existing networks and services on "rates, terms, and conditions that are just, reasonable and non-discriminatory."29 To that end, it mandates the interconnection of incumbent local exchange companies ("ILECs") and competitive local exchange companies ("CLECs").30 Sections 251 and 252 of the Act require incumbent carriers to negotiate, in good faith, agreements regarding the terms and conditions of access, interconnection, resale and any other arrangement required for open competition.31

Although the terms of the agreements were determined primarily by negotiation between the LECs, the Act required that they include an arrangement to properly compensate for carriage of competitors' calls. Section 251(b)(5) imposes on all LECs a "duty to establish reciprocal compensation arrangements for the transport and termination of telecommunications."32 Those arrangements must "provide for the mutual and reciprocal recovery by each carrier of costs associated with the transport and termination on each carrier's network facilities of calls that originate on the network facilities of the other carrier."33

In accordance with this requirement, most interconnection agreements provided for a specific type of arrangement that came to be known as reciprocal compensation. FCC regulation defines reciprocal compensation as an "arrangement between two carriers . . . in which each of the two carriers receives compensation from the other carrier for the transport and termination on each carrier's network facilities of local telecommunications traffic that originates on the network facilities of the other carrier."34 Thus, the arrangement is intended for a situation in which only two carriers collaborate to complete a call.35 Under the terms of the agreements, an end user will pay charges to her LEC, which originates the call.36 The originating LEC must then compensate the terminating LEC for completing the call.37

An originating LEC pays reciprocal compensation only when a local call is terminated on a competing LEC's network.38 Termination is defined as "the switching of traffic that is subject to Section 251(b)(5) at the terminating carrier's end office switch (or equivalent facility) and delivery of that traffic to the called party's premises."39 A traditional call is terminated not when the call is completed but when it rings on the called party's line and is answered.40

The current controversy

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28 Access Charge NPRM, 11 FCC Rcd. at 21,358, para. 2.
30 See id.
32 47 U.S.C. §251(b)(5). Some differentiation must be made between the "reciprocal compensation" called for in the Act, meaning any form of recovery of interconnection costs among carriers, and the specific arrangement called reciprocal compensation discussed herein.
34 47 C.F.R. §51.701(e) (1997); see also Susan Bahr, Will compensation ever be reciprocal?, AMERICA'S NETWORK, (visited Jan. 28, 1999) <www.americasnetwork.com/issues/98issues/981001/981001wash.html> ("The Telecommunications Act of 1996 requires incumbent local exchange carriers . . . to establish reciprocal compensation agreements for the transport and termination of traffic that originates on their networks and terminates on another carrier's network.").
places an emphasis on the definition of termination because it centers on whether the traffic at issue is terminated at the point of presence of the ISP, making it inherently local, or on the internet, where it would be classified as interstate in nature.\textsuperscript{41}

Because ISP traffic does not have a point of termination in the usual sense, the issue becomes more complicated.\textsuperscript{42} CLECs argue that a circuit switched call to the local number of an ISP terminates at the location of the ISP’s modem banks, within the local calling area.\textsuperscript{43} They seek to differentiate between that first element of the call and the second element—one or more packet-switched connections to the internet.\textsuperscript{44} Recent decisions by the FCC have instead relied on ILEC arguments that it is the end-to-end nature of the call and not the physical location of the technology that controls whether a call is intrastate or interstate in nature.\textsuperscript{45}

The \textit{Reciprocal Compensation Ruling} reiterates that the proper way to determine the jurisdictional nature of particular types of calls is to look at the end points of the communications.\textsuperscript{46} For calls to ISPs, they determined that from end to end, meaning from the end user to the actual location of the website being accessed, internet traffic is interstate and interexchange.\textsuperscript{47} The ruling analogized the transfer from the ISP’s equipment to the internet to a telecommunications switch, and applied previous FCC decisions in which the jurisdictional nature of a call was determined by the end points of the communication and not by any intermediate switch or exchange between carriers.\textsuperscript{48}

III. RECIPROCAL COMPENSATION AND THE INTERNET

“The whole debate of reciprocal compensation boils down to a bad business deal the incumbents made.”\textsuperscript{49} During negotiations for interconnection, CLECs requested a type of arrangement called “bill and keep,” where telephone traffic between carriers is exchanged without an interconnection fee because, in a rational market, the calls tend to equal out.\textsuperscript{50} ILECs, however, insisted on a complicated method of reciprocal compensation where each LEC keeps a record of terminating calls and pays a balance at the end of the

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  \item \textsuperscript{41} Section 251(b)(5) applies only to traffic that is originated and terminated within a local area; therefore, reciprocal compensation is paid only for local traffic. \textit{See} 47 C.F.R. §51.701(a) (“The provisions of this subpart apply only to reciprocal compensation for transport and termination of local telecommunications traffic between LECs and other telecommunications carriers.”). Local traffic is defined in most interconnection agreements as traffic terminated within local calling areas, as described in the maps, tariffs and rate schedules approved by state utility commissions and the FCC. \textit{See e.g.}, Southwestern Bell Tel. Co. v. Public Util. Comm’n of Texas, 1998 U.S. Dist. LEXIS 12,938, *6 (W.D. Tex. June 16, 1998); \textit{see also} In re Application for Approval of an Interconnection Agreement between Brooks Fiber Comm. of Michigan, Inc., and Ameritech Michigan, Case No. U-11178, \textit{Opinion and Order,} 11 FCC Rcd. at 16,013, para. 1035 (noting that state commissions have historically defined the local calling areas of LECs).
  \item \textsuperscript{42} \textit{See Reciprocal Compensation Ruling, supra note} 6, at para. 18.
  \item \textsuperscript{43} \textit{See Comments of RCN Telecom Services, Inc., to the Request by ALTS for Clarification of the Commission’s Rules Regarding Reciprocal Compensation for Information Service Provider Traffic, Dkt. No. CC/CPD 97-30, at} 5 (Aug. 12, 1998).
  \item \textsuperscript{44} \textit{See Mich. PSC Decision, supra note} 41, at 9-10. Further complicating the location of termination for internet purposes is the fact that the contents of frequently visited websites may be cached at the ISP’s server or mirrored by other websites. \textit{See Reciprocal Compensation Ruling, supra note} 6, at para. 18.
  \item \textsuperscript{45} \textit{In a similar case, the FCC issued an order that digital subscriber line services were interstate services properly} tarifed at the state level. \textit{See generally} \textit{In re GTE Telephone Operating Cos., Memorandum Opinion and Order, 15 FCC Rcd. 22,466 (1998) [hereinafter GTE DSL Order].} DSL services allow ISPs to provide their customers with high-speed access to the internet. \textit{See In re Bell Atlantic Telephone Cos., Memorandum Opinion and Order,} CC Dkt. No. 98-168, FCC 98-317, para. 1 (Nov. 30, 1998). However, these decisions cannot be directly analogized to the current controversy over reciprocal compensation, because DSL service is a dedicated connection rather than a circuit-switched dial up connection to an ISP. \textit{See GTE DSL Order, 15 FCC Rcd. at} 22466, para. 2. No reciprocal compensation arrangements are involved in the provision of DSL. \textit{See id.}
  \item \textsuperscript{46} \textit{See Reciprocal Compensation Ruling, supra note} 6, at para. 10.
  \item \textsuperscript{47} \textit{See Id.}
  \item \textsuperscript{48} \textit{See id.}
ILECs believed they would complete many more calls because of their larger customer base, and they would therefore benefit from such an arrangement.52

In response, CLECs turned the reciprocal compensation arrangements to their advantage by soliciting the business of ISPs.53 CLECs attracted ISP customers by offering local fiber-optics networks and meeting a demand for bandwidth that ILECs may have underestimated.54 Under the usual terms of reciprocal compensation, callers from one network may originate calls, but callers on the other network are likely to return the calls and the final result will be roughly equal. In contrast, ISPs receive thousands of calls from their customers but make no return calls, requiring ILECs to pay millions of dollars in terminating call charges.55

Many ILECs decided at that time to unilaterally withhold payment for calls to ISPs.56 ILECs admitted that the disputed calls were placed to a telephone number within the same local calling area and were billed as a local call.57 They argued, however, that traffic to ISPs is not terminated at the network facilities of the LEC providing service to the ISP, but is instead switched from the ISP’s location to the worldwide networks of the internet.58 As a matter of law and of contract interpretation, they argued, the calls are interstate and are not subject to reciprocal compensation.59

Before the FCC issued its decision, twenty-nine state public utility commissions examined the question of whether calls made to an ISP are local in nature and subject to the payment of reciprocal compensation.60 All agreed that the reciprocal compensation should stand, based on arguments that calls were intended under the interconnection agreements to be billed and compensated as a local call, or arguments that the interconnection agreements were unclear and therefore the commissions had the authority to interpret them as such.61 Although the state decisions dedicated a large portion of their discussion to where ISP traffic terminates, they also were based on a variety of other factors posited by the FCC as supporting the retention of reciprocal compensation for ISP traffic.62 In any case, a decision in favor of the CLECs could have been justified entirely on the parties’ decision].

See Mich. PSC Decision, supra note 41, at 8.

See Mo. PSC Decision, supra note 58, at 1-2. Contentions were made in the state commission proceedings that the state commissions lacked the jurisdiction under federal law to make decisions regarding internet traffic. See Southwestern Bell, 1998 U.S. Dist. LEXIS 12998, at *24. However, the 1996 Act clearly requires state commissions to be involved in decisions regarding interconnection agreements. The state commissions have jurisdiction over the question of reciprocal compensation because the terms of Section 251 provide that, should parties to an interconnection agreement not be able to negotiate voluntarily, it will be brought to the state public utility commission for arbitration. See 47 U.S.C. §252(b)(1) (1994 & Supp. II 1997). However, the state commissions may not have jurisdiction over the internet calls themselves if the calls are properly characterized as interstate. See 47 U.S.C. §151 (giving the FCC the authority to regulate “interstate and foreign commerce in communication by wire and radio”).

See Mich. PSC Decision, supra note 41, at 10. Even if the parties had no intention of addressing ISP traffic in the agreements, the duty to arbitrate included in the 1996 Act gives the state commissions the authority to settle any disputes as to the contents of the agreements. See 47 U.S.C. §252(b)(1) (establishing that any party to the negotiation of interconnection agreements may petition the state commission to arbitrate any open issues).

The ruling established that parties entering into interconnection agreements may reasonably have agreed that ISP traffic should be treated in the same manner as local traffic for purposes of reciprocal compensation payments. See Reciprocal Compensation Ruling, supra note 6, at para. 24. In determining whether the parties so agreed, the ruling suggested

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52 See id.
53 See Cronan O’Connell, ALTS Responds to New York Times Article About Reciprocal Compensation, Oct. 28, 1998 <www.alts.org>. CLECs also solicited the business of other terminating-only traffic, for example, paging, dispatch and delivery services, radio call-in shows and technical support lines. See id.
54 See id.
55 See Pressman, supra note 51. CLECs count on these charges as a large part of their revenue. See Nortel Networks Reciprocal Compensation Special Report (visited Jan. 28, 1999) <www.isg-telecom.com/special.htm>.
intent on entering the agreements, as indicated in their expectations under current regulation and their own treatment of internet traffic. 63

IV. FCC TREATMENT OF INTERNET ISSUES

An examination of the history of FCC treatment of internet traffic is important in determining how the traffic may be treated in the future. One area of regulation that plays a large role in the debate is the distinction between information services and telecommunications services, and how that distinction determines jurisdiction, pricing, access charges and other important factors in the competitive marketplace. 64

A. The Information Services/Telecommunications Services Dichotomy

Although the internet has become increasingly adept at offering the same types of communications services offered by traditional common carriers, a divergent history of regulation arises due to its basic nature as an information service rather than a telecommunications service. As such, the internet enjoys an exclusion from regulatory limitations imposed on common carriers. This exclusion complicates settlement of interconnection issues where the internet is involved.

The FCC began to attempt to reconcile "the growing convergence and interdependence of communications and data processing technologies" in its Computer Inquiry proceedings in the mid-1960s. 65 In the late 1970s, the FCC first distinguished between "basic" communications services and "enhanced" communications services. 66 Basic services involve standard voice transmission, while enhanced services are defined as those "offered over common carrier transmission facilities used in interstate communications, which employ computer processing applications that act on the format, content, code, protocol or similar aspects of the subscriber's transmitted information; provide the subscriber additional, different or restructured information; or involve subscriber interaction with stored information." 67 That definition includes the provision of internet access, which consists of such functions as email storage and retrieval, website hosting and domain name searches, providing information and data processing in addition to transmission. 68 The distinction was maintained within the 1996 Act, where Congress differentiated between "information services" and "telecommunications services" along the same lines as the basic/enhanced distinction. 69

The distinction between services is necessary to determine those users of the PSTN that are not classified as telecommunications carriers under the 1996 Act and therefore are not subject to Title...
II regulation. However, because information services by their very nature include a telecommunications component, the distinction becomes an issue in almost every implementation of the competition and interconnection facets of the 1996 Act.

B. The Jurisdictional Question: Local or Interstate Traffic

Although classification of the internet as an information service has an extensive effect on regulation, the enhanced services exemption does not change the basic jurisdictional nature of the traffic. It is also necessary, therefore, to examine the classification of internet traffic as local or interstate.

The regulatory structure of communications in this country depends entirely on whether a given communication is local or interstate in nature. Therefore, the first question in analyzing FCC action is determining whether the FCC can properly exercise jurisdiction. A large portion of the Reciprocal Compensation Ruling was dedicated to determining whether the nature of the internet made it inherently long distance and therefore subject to the jurisdiction of the FCC.

In determining the jurisdiction of the FCC, courts generally have examined the “nature” of the call and not the physical location of the facilities. By that method, purely intrastate facilities used to complete even a single interstate call fall under the FCC’s jurisdiction. The FCC has rejected arguments that calls should be separated into two jurisdictional transactions when they utilize a two-step procedure by which calls are first connected to a local telephone service and then switched to an out-of-state destination: Such switching is considered an interim step in a single end-to-end communication.

This treatment would logically lead to the conclusion that all aspects of the internet call are interstate and that CLEC arguments were without merit. However, the FCC has made a distinction between calls to the internet and other end-to-end interstate calls. State decisions indicated that, because of the distinction between telecommunications services and information services, there is a telecommunications component that the state commissions rightfully exercised jurisdiction over as well as an information services component that lies within the jurisdiction of the FCC.

However, the FCC has jurisdiction over a substantial portion of the transmission that accesses interstate or foreign databases and websites. In previous decisions, the Commission has stated, “an otherwise interstate basic service . . . does not lose its character as such simply because it is being

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70 The 1996 Act incorporates the distinction by differentiating between telecommunications and information services. See id. Under Title II of the Communications Act of 1934, as amended by the 1996 Act, telecommunications carriers are subject to the obligation to file tariffs, to charge no unreasonably discriminatory rates, to provide for interconnection and to pay universal service fees, among others. See Digital Tornado, supra note 7, at 30. As an information service, an internet carrier is released from these obligations. See id.


72 See Reciprocal Compensation Ruling, supra note 6, at para. 16.

73 See 47 U.S.C. §152 (giving the FCC jurisdiction over interstate and foreign communications while reserving for the state public utility commissions jurisdiction over intrastate communications).

74 Although the traffic was found by the FCC to be jurisdictionally interstate, that does not remove the interconnection agreements from the jurisdiction of the state commissions because of the specific grant of jurisdiction in Section 251 and 252. See Reciprocal Compensation Ruling, supra note 6, at para. 22 ("Where parties have agreed to include [ISP] traffic within their . . . interconnection agreements, they are bound by those agreements, as interpreted and enforced by state commissions.


77 See Reciprocal Compensation Ruling, supra note 6, at para. 18.

78 See, e.g., In re Federal-State Joint Board on Universal Service, Report and Order, 12 FCC Rcd. 8776, 8822, para. 83 (concluding that internet access consists of more than one component).

79 See also National Ass’n of Regulatory Util. Comm’rs v. FCC, 746 F.2d 1492 (D.C. Cir. 1984) (holding that the FCC has the authority to regulate intrastate WATS used to complete interstate calls).

80 See generally Southwestern Bell Telephone Co., Order, 3 FCC Rcd. 6102 (1988) (denying Southwestern Bell’s argument that any credit card call should be treated for jurisdictional purposes as two separate calls, one from the end user to the IXC switch and one from the switch to the called party).
used as a component in the provision of a[n enhanced] service that is not subject to Title II."81 In addition, it has never been the practice of the FCC to determine the nature of a call from an intermediate step in the transmission, even for enhanced services.82 For jurisdictional purposes, traffic is analyzed as a continuous transmission from the end user to a distant internet site."83 For these reasons, ISP traffic was found to be interstate in nature and subject to the jurisdiction of the FCC.

C. Is Reciprocal Compensation Due for Internet Traffic?

Although the Reciprocal Compensation Ruling devotes a large part of its analysis to the question of FCC jurisdiction, the designation of ISP traffic as jurisdictionally interstate was not determinative of the reciprocal compensation issue.84 The enhanced services exemption must also be factored into any decision on compensation for ISP traffic. An analysis of the access charge system and the enhanced services exemption may elaborate on the problem.

When two or more carriers collaborate to complete a call, the carriers are reimbursed either through reciprocal compensation or through access charges, depending on whether the call is intrastate or interstate.85 When the access charge system was established in 1983, enhanced service providers were classified as end users rather than carriers and the calls were treated as local rather than interstate.86 Under the end user classification, ISPs purchase business lines under local tariffs for access to the PSTN rather than pay the access charges interstate telecommunications carriers are assessed.87

1. Access Charges and the Internet

Although interexchange carriers ("IXCs") operate on essentially the same principal as ISPs, LECs are compensated for carrying IXC traffic through the payment of access charges.88 Access charges address the situation where the calling party will be transferred through three telecommunications carriers to reach the end user; they are paid only for interexchange toll service.89 The originating LEC, IXC and terminating LEC collaborate to carry the call, and the IXC pays a fee called an access charge to both the originating and terminating LEC.90 If access charges were applied to ISPs, the end user would pay the ISP, who would then pay both the originating and the terminating LEC for carrying the call.91

The FCC recently reaffirmed its treatment of ISP traffic for access charge purposes. In the Access Charge Reform Order,92 it reiterated that ISPs may purchase services from ILECs as end users, usage continues to grow those services have an increasingly significant effect. See In re Access Charge Reform, First Report and Order, 12 FCC Rcd. 15,982, 16,134, para. 345 (1997) [hereinafter Access Charge Reform Order].

81 See id. at para. 13 (quoting Filing and Review of Open Network Architecture Plans, Memorandum Opinion and Order, 4 FCC Rcd. 1, 141 (1988), aff'd sub nom. People of State of Cal. v. FCC, 4 F.3d 1505 (9th Cir. 1993)).
82 See Reciprocal Compensation Ruling, supra note 6, at para. 10. See, e.g., Petition for Emergency Relief and Declaratory Ruling Filed by BellSouth Corporation, Memorandum Opinion and Order, 7 FCC Rcd. 1619, 1620, para. 9 (1992) (deciding interstate calls to voice mail systems were entirely interstate despite a switch within the state to an enhanced service, because there is "a continuous path of communications across state lines between the caller and the voice mail service").
83 See Reciprocal Compensation Ruling, supra note 6, at para. 13.
84 See id. at para. 1.
85 See id. at para. 9. Interstate traffic is defined by the FCC as that which occurs "when the communication or transmission originates in any state, territory, possession of the United States, or the District of Columbia and terminates in another state, territory, possession, or the District of Columbia." Universal Service Report to Congress, 13 FCC Rcd. at 11,555, para. 112.
86 See MTS and WATS Market Structure, Memorandum Opinion and Order, 97 F.C.C.2d 682, 763, para. 204 (1983) [hereinafter Access Charge Reconsideration Order]. When the access charge structure was initiated, information services had very little effect on the public switched network, but as
paying business line rates and the appropriate subscriber line charge rather than interstate access rates, even for calls that appear to traverse state boundaries.\textsuperscript{93} In retaining the ESP exemption from access charges, the Commission determined that it would “avoid disrupting the still-evolving information services industry and advance the goals of the 1996 Act to ‘preserve the vibrant and competitive free market that presently exists for the internet and other interactive computer services.’”\textsuperscript{94}

In maintaining the existing pricing structure for traffic to ISPs, the FCC could not have intended to leave LECs without compensation for carrying the traffic. Although the Commission established that ISP traffic was not necessarily local, it also determined that the traffic bore little resemblance to IXC traffic.\textsuperscript{95} It indicated that ISP traffic bears greater similarity to other business traffic characterized by great amounts of incoming traffic and little outgoing.\textsuperscript{96} The FCC justified the nonpayment of access charges by ISPs despite arguments by ILECs that they would go uncompensated for ISP calls by pointing out that ISPs purchase their services under state tariffs.\textsuperscript{97} By indicating that LECs were compensated for the traffic under existing state-tariffed services, the Commission may have shown that the reciprocal compensation method was proper for LECs carrying ISP traffic.

2. The FCC’s Declaratory Ruling

In June 1997, the Association for Local Telecommunications Services (“ALTS”) requested that the FCC clarify its rules regarding treatment of internet traffic for reciprocal compensation.\textsuperscript{98} In response, the FCC requested comment on the treatment of ISPs under current reciprocal compensation agreements;\textsuperscript{99} a declaratory ruling was issued in February 1999. In it, the FCC determined that internet dial-up traffic is interstate communication for purposes of establishing FCC jurisdiction because a substantial portion of the transmission from the end user continues through the PSTN to websites and internet nodes located in other states.\textsuperscript{100}

Although the jurisdictional decision has the potential to alter the way carriage of internet traffic is compensated, the FCC went to great lengths to establish that it did not necessarily remove the option of reciprocal compensation for the traffic.\textsuperscript{101} Because the FCC decision was not in effect at the time the state decisions were made, and because previously the FCC had directed states to treat ISP traffic as local, the FCC’s decision did not unilaterally overturn the state decisions regarding the traffic.\textsuperscript{102} Instead, it declared that there are ample other reasons for the decisions to be upheld for the time being and requested comment on how future agreements should be structured.\textsuperscript{103}

FCC Chairman Kennard and other commissioners have reiterated that the ruling was not meant to overturn the state PUC decisions.\textsuperscript{104} However, because the ruling directly contradicts the states’ findings that the traffic is local, the actual effect has been to allow ILECs to succeed in several new communications.
challenges to the agreements. As state decisions are overturned on reconsideration due to the FCC's decision, or in any event when future agreements are negotiated, it will be necessary to design a new method of compensation for the traffic.

3. Effect on State Decisions

The FCC's decision has kept open the option that state commissions may reexamine their reciprocal compensation decisions and reach the same results as before despite the FCC's finding that calls to ISPs are interstate in nature. The state decisions may do this in one of two ways: a theory based on the parties ability to freely contract, or one based on the absence of federal law in the area prior to the state decisions. Due to principals of contract interpretation, as outlined in many of the state court decisions, the current interconnection agreements can be found to properly include internet traffic in agreements to pay reciprocal compensation. Also, because the FCC had not ruled on the proper method of compensation for ISP traffic at the time, it was clearly within the power of LECs to negotiate reciprocal compensation arrangements for the traffic and within the power of the state commissions to interpret and enforce the decisions.

The state decisions were based on more than just classification of the traffic as local. Under principles of contract interpretation, the belief of the parties that ISP traffic would be included in local traffic at the time of negotiating the agreements would require that the traffic be included. Although ILECs state that it was their intent from the start that ISP traffic not be included in reciprocal compensation obligations, the traffic was not specifically exempted. It was not their place to exempt it, they argue, but the CLECs' to specifically include it based on FCC precedent that specified the traffic was interstate. However, circumstances indicate that ILECs did not contemplate treating ISP traffic differently from other traffic when the agreements were negotiated. For example, ILECs had previously argued in other proceedings that calls to ISPs should be treated as local. In addition, during the course of the agreements ILECs continued to bill reciprocal compensation charges to other carriers for calls terminated to ISPs on their net-

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See generally Mich. PSC Decision, supra note 41, at 8 (establishing that the "calls are not among the listed switched exchange access services that are exempt from reciprocal compensation").

See In re Complaint of MCI WorldCom, Inc. against New England Telephone and Telegraph Company d/b/a Bell Atlantic-Massachusetts for breach of interconnection terms entered into under Sections 251 and 252 of the Telecommunications Act of 1996, D.T.E. 97-116-C, Order <www2.scri.net/psc/dockets/documents/10075-98.html> (Sept. 15, 1998) [hereinafter Fla. PSC Decision] (outlining BellSouth’s argument that, although the interconnection agreement did not specify whether ISP traffic was included in the definition of local traffic, "it was WorldCom's obligation to raise the issue in negotiations").

In fact, Bell Atlantic, when interconnection agreements were first being negotiated, responded to misgivings by pointing out, "[i]f these rates are set too high, the result will be that new entrants, who are in a much better position to selectively market their services, will sign up customers whose calls are predominantly inbound, such as credit card authorization centers and [internet access providers]." Reply Comments of Bell Atlantic to the Request by ALTS for Clarification of the Commission's Rules Regarding Reciprocal Compensation for Internet Service Provider Traffic, Dkt. No. CCB/CPD 97-30, at 21 (May 30, 1996).

See id. at 15. BellSouth previously had argued "connections to the local exchange network for the purpose of providing an information service should be treated as any other local exchange service. See id. (quoting BellSouth in Investigation into the Statewide Offering of Access to the Local Network for the Purpose of Providing Information Services, F.P.S.C. Order No. 21815, Dkt. No. 880423-TP (Sept. 5, 1989)). The Florida PSC had previously determined that end users access information services through local calls. See Fla. PSC Decision at 15-16. At the time BellSouth entered into interconnection agreements, Florida was operating under that definition, and both parties would have understood the traffic to be considered local for purposes of interconnection and reciprocal compensation. See id.
works and to treat the calls as local for billing, rating, reporting and separations purposes. Finally, it is technologically infeasible to expect LECs to distinguish between calls to ISPs and calls to other local end users. These calls are indistinguishable from other local calls: the calling party dials a local, seven-digit telephone number, the call is directed to the ISPs premises within the local calling area, and the caller is billed under local tariffs for the call. Due to all these factors, it may be reasonable to conclude that, because there had been no ruling on reciprocal compensation for ISP traffic at the time the agreements had been negotiated or at the time the state decisions were made, the traffic should not be excluded from the agreements.

D. Future Treatment of Internet Traffic

A clear compensation regime is necessary for ISPs to connect to the PSTN. Without it, carriers have no incentive to carry the traffic or to upgrade their networks to accommodate it, in direct contradiction to the stated goals of the 1996 Act. However, the FCC has already declared that internet traffic is exempt from access charges. If carriers are precluded from reciprocal compensation for ISP traffic at this time, they will have little reason to solicit ISP customers or to upgrade their networks to carry data traffic. Not only will removing this source of CLEC revenue impede competition, but because the internet has flourished under a flat rate payment structure, a change in payment methods at this time may damage the development of the internet as a viable medium.

Because ISPs are exempted from paying the usage-based, per-minute fees imposed by the access charge structure, ILECs claim that use of the PSTN for internet traffic heavily burdens the PSTN's resources. However, non-ILEC studies have contradicted these claims that the internet places burdens on the PSTN that go uncompensated for ILEC network operators.

\section*{References}

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\item See Mich. PSC Decision, \textit{supra} note 41, at 9. ("[W]hen implementing the interconnection agreement (and before those agreements, its interconnection tariff), Ameritech Michigan billed reciprocal compensation charges to other providers for calls terminated to ISPs that were customers of Ameritech Michigan and paid reciprocal compensation to other providers for calls terminated to ISPs on their networks.")
\item See Cal. PUC Decision, \textit{supra} note 40, at 10 (stating that Pacific is still collecting incoming revenue from calls to ISPs by their own end users as if they were standard local business calls); Ohio PUC Decision, \textit{supra} note 13, at 4 (stating that "Ameritech bills its own customers for calls to ISPs under its local tariff rates" and treats this traffic as local for rate, accounting and billing purposes); Mich. PSC Decision, \textit{supra} note 41, at 11. The state commissions outlined reasons why Ameritech anticipated treating ISP traffic as local. See \textit{id}. For example, Ameritech charges its end users for a call to an ISP under the local exchange tariff. See \textit{id}. It then books the call to a local revenue account, allocates the associated cost to the intrastate jurisdiction and reports the revenues and costs as local for reporting purposes. See \textit{id}. Also, "despite its claim that it is improper to pay reciprocal compensation for any call to any information provider at a local telephone number and despite acknowledging that ISPs are not the only information service providers, Ameritech Michigan has not sought to implement its new policy any more broadly." \textit{Id.}
\item See Mo. PSC Decision, \textit{supra} note 58, at 11.
\item See Mich. PSC Decision, \textit{supra} note 41, at 9.
\item See CRB letter, \textit{supra} note 93.
\item The 1996 Act was intended "to promote the continued development of the [internet] and other interactive computer services and other interactive media; . . . 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)(1)–(2) (1994 & Supp. II 1997).
\item See Access Charge Reform Order, 12 FCC Red. at 16,133, para. 344 ("We conclude that the existing pricing structure for ISPs should remain in place, and incumbent LECs will not be permitted to assess interstate per-minute access charges on ISPs.").
\item See generally \textit{Report of Bell Atlantic on Internet Traffic} (1996); \textit{Pacific Bell ESP Impact Study} (1996); Letter from NYNEX to James Schlichting, Chief, Competitive Pricing Division, FCC (1996); US West Communications ESP Network Study—Final Results (1996); Amir Atai, Ph.D., & James Gordon, Ph.D., Bellcore White Paper, Architectural Solutions to Internet Congestion Based on SS7 and Intelligent Network Capabilities (1996). "The Bell Operating Companies ("BOCs") compiled studies on the impact of the internet on the PSTN, to justify their arguments that internet traffic should be subject to access charges. The studies found that," [internet traffic increases the load on PSTN resources, requiring the purchase and deployment of additional PSTN equipment, in order to carry the excess traffic. It follows that internet traffic increases the costs experienced by network operators. In contrast, it results in little or no compensating revenue." Atai & Gordon, \textit{supra}, at 2.
\item A study by Economics and Technology, Inc. ("ETI"), prepared for the Internet Access Coalition, questioned the BOCs' use of anecdotal evidence and worst-case systems to conduct their studies. See Lee L. Selwyn & Joseph W. Laszlo, \textit{The Effect of Internet Use on the Nation's Telephone Network} (1997) cwww.itic.org/iss_pol/ppdocs/eti/eti_loc.htm\textgt. The ETI study found that the BOCs overstated the effect of data traffic on the PSTN and understated the revenues generated by the traffic. See \textit{id}. The study states that, because the heaviest internet traffic is at non-peak times, the traffic utilizes service that would otherwise lie idle and lowers the per-minute cost of providing the service. See \textit{id}. In addition, second residential subscriber lines in homes
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Although ILECs are compensated for the traffic through the flat monthly rate residential users pay, they argue that the per-minute reciprocal compensation payments are far out of proportion to these flat-rate revenues; consequently, they argue, they unfairly lose money because of length and frequency of internet traffic. In making these arguments, ILECs fail to take into account other revenue factors that offset the greater price of internet traffic. For example, the originating LEC gains revenues from state-regulated local service charges, from CLECs’ increased purchase of lines connecting to ILEC switches and from the ISP customers’ purchase of second lines.

ISPs are treated as end users to “avoid[,] disrupting the still-evolving information services industry and advance[,] the goals of the 1996 Act.” The structure of reciprocal compensation is more suited to the carriage of ISP traffic than the structure of access charges, if the stated goals of promoting use of advanced services and the internet are to be accomplished. Because those goals can best be achieved by maintaining a flat-rate payment structure for ISP use, reciprocal compensation, used for other flat-rate calls, is more suitable. Until a way is found to fit the current regulatory structure to the converging telecommunications market, reciprocal compensation should be retained.

The most likely result of the declaratory ruling is that, after much litigation by ILECs to overturn the previous PUC decisions, the reciprocal compensation arrangements within existing interconnection agreements will stand. It is likely, however, that in future agreements, negotiations between ILECs and CLECs will provide a more equitable method of compensation for the traffic.

This solution would comply with the general trend to allow free market negotiation to determine telecommunications policies rather than heavy-handed government regulation.

Prices charged by ISPs are unregulated by the FCC; however, a large portion of the internet utilizes the facilities of telecommunications carriers. Because those carriers are subject to regulation by the FCC, regulatory decisions have “a profound influence over the economics of the [i]nternet market.” Any decision concerning compensation for the carriers will affect pricing for internet service at all levels and has the potential to adversely affect the development of the internet medium. Given its motivation to protect this unique communications medium, the FCC should carefully monitor state commission decisions and future agreements to assure that LECs are adequately compensated for the traffic.

After current agreements expire, or should state decisions be overturned, some other method must be found to compensate for carriage of ISP traffic; several have been proposed. One such solution would assess a per-minute usage charge for ISPs to receive calls from subscribers. This is argued, would reduce overload of the network: ISPs would pass per-minute costs on to customers, who would only stay on for as long as it was worth the cost. LECs would receive revenues that more closely match cost of providing internet calls, with their longer connection time, and fund the necessary upgrade costs to prevent congestion. The plan would incorporate peak pricing, and could possibly implement a floor on how much usage per month would incur usage costs. It could also condition rates of usage on upgrade to more data-friendly network.

used primarily for data traffic brought in $3.5 billion in revenues between 1990 and 1995. See id. Compared with the BOCs’ estimate of a cost of $245 million to upgrade the PSTN to handle the traffic, the revenue to the BOCs for the traffic is 6 times the cost to handle the traffic. See id.

See Access Charge Reform Order, 12 FCC Rcd. at 16,134, para. 346.

See CRB letter, supra note 93; see also Selwyn & Laszlo, supra note 120, at 2.

See Access Charge Reform Order, 12 FCC Rcd. at 16,133, para. 344.

See Kennard, supra note 2 (indicating that the reciprocal compensation order allows competition to flourish on the internet and creates “a market where the relationships between carriers are governed by contracts, not government regulation”). Dominant firms, overwhelming public interest imperatives, or inherent invasiveness in the broadcast media have been the traditional justifications for communications regulation. See DIGITAL TORNADO, supra note 7, at 29. Most of these justifications do not apply to the internet. See id.

Id. at 48. “The [i]nternet grew so fast that regulators hardly had a chance to regulate it even if they wanted to.” See Kennard, supra note 2.

DIGITAL TORNADO, supra note 7, at 48.

See id. at 62.

See id. at 62. But lower usage of the internet is hardly a goal worth pursuing—it may cut down on overload, but at the expense of stifling the growth of the internet as a communications medium and the development of innovative internet-based services. See id. at 66.

See DIGITAL TORNADO, supra note 7, at 62.

See id. at 63.

See id. at 64.
Implementation of a usage charge would operate differently from access charges. Access charges have inherent in them a subsidization factor: the charges far exceed the actual cost to provide service and are economically inefficient.\textsuperscript{132} The FCC refused to extend access charges to include internet traffic because it did not wish to impose this inefficient pricing structure on an additional class of users.\textsuperscript{135} In addition, access charges incorporate a range of features and services designed for carriage of IXC voice calls; ISPs may never utilize these services.\textsuperscript{134}

1. Future Action Must Acknowledge the Changing Nature of Communications

In the future, maintaining the current classification structure may not be as feasible an option. The information services/telecommunications distinction is rapidly breaking down. "Increasingly, all electronic communications are becoming digital. Print, audio, video, voice, and data can all be transmitted in digital form, as collections of ones and zeros."\textsuperscript{138} New broadband technology "makes it possible to send and receive enormous amounts of digital information at high rates of speed."\textsuperscript{136}

However, differentiating between internet service and all other communications services will only make the switch more difficult. "[I]n order to promote equity and efficiency, we should avoid creating regulatory distinctions based purely on technology."\textsuperscript{137} For convergence to be a reality, diverging regulatory structures cannot exist for communications systems that provide essentially the same service. It will ultimately be necessary to treat the internet as a switch to a network structure, and regulate it as a telecommunications service. In the future—and with revisions to the current classification structure—ISPs may choose to classify themselves as telecommunications carriers. Although this would subject them to possibly deleterious interconnection and universal service requirements, among other limitations, it would also allow them to take advantage of unbundling requirements and use unbundled network elements.\textsuperscript{138} Another benefit to this classification would be to mandate reciprocal compensation payments to ISPs for terminating calls on their networks.\textsuperscript{139}

For this broadband future to come into existence, it will be necessary in the near future to institute a pricing plan that best promotes upgrade to the PSTN. The technology used in transmitting data does not efficiently use resources as allocated in the voice-oriented PSTN.\textsuperscript{140} Each call made ties up lines and switches in a way that was never anticipated.\textsuperscript{141} ISP callers tend to make more frequent calls and to tie up the lines longer, utilizing a switched circuit in a way that would much more efficiently be served by some other calling arrangement.\textsuperscript{142} Therefore, the nature of the PSTN, perfect for voice telephony, is not suited to digital data transmission. The only solution will be to replace the PSTN with a digital, packet-switched, fiber-optic network, an upgrade

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    \item \textsuperscript{132} See id. at 56. Access charges include a rate of return component designed to recover the monopoly LECs' embedded costs for underlying facilities. See id. The charges are further distorted by the jurisdictional separations system, which apportions costs between interstate and intrastate jurisdictions in a way that does not reflect causation. See id. In addition, access charges include the carrier common line charge, levied per-minute on all LEC access customers but incurred only by end user subscriber lines. See id.
    \item \textsuperscript{134} See Access Charge Reform Order, 12 FCC Rcd. at 16,132-33, para. 343
    \item \textsuperscript{135} See id. at 16,133, para. 345; see also Digital Tornado, supra note 7, at 62.
    \item \textsuperscript{136} In re Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, Report, CC Dkt. No. 98-146, FCC 99-5, para. 2 (Feb. 2, 1999) [hereinafter 706 Report].
    \item \textsuperscript{137} Id.
    \item \textsuperscript{138} Universal Service Report to Congress, 13 FCC Rcd. at 11,548, para. 98.
    \item \textsuperscript{139} See generally Sen. Ted Stevens, The Internet and the Telecommunications Act of 1996, 35 HARV. J. ON LEGIS. 5 (1998) (discussing an interpretation of the 1996 Act that requires that the internet be treated as a telecommunications service).
    \item \textsuperscript{139} See Digital Tornado, supra note 7, at 35.
    \item \textsuperscript{140} See Rashes, supra note 11, at 71. This article takes the position of the ETI study, discussed supra note 120, in maintaining that the internet as it is used at this time imposes few additional costs on the PSTN. But see J. Gregory Sidak & Daniel F. Spulber, Cyberjam: The Law and Economics of Internet Congestion of the Telephone Network, 21 HARV. J. L. & PUB. POL'y. 327, 327 (1998) (maintaining that "the growth of the network has created evident strains on the capacity of the [PSTN] . . . that should require ISPs to pay access charges to compensate for the additional costs"). It should be noted, however, that the Cyberjam article draws from an affidavit submitted to the FCC on behalf of the United States Telephone Association, a trade group comprised primarily of BOCs. See id. Given that background, it comes as no surprise that the article takes the position advocated by the various BOC studies done on network congestion, contrary to the ETI study.
    \item \textsuperscript{141} See Rashes, supra note 11, at 71.
    \item \textsuperscript{142} See id. at 71-72.
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that is in the process but will not be a complete reality for a long time to come. By that time, packet-switching technology will have made any dedicated line system obsolete. 148

Because of the reciprocal compensation arrangement, CLECs were willing to court ISP traffic by investing in upgrade of the basic, copper-wire network with fiber-optics. 144 A significant obstacle to internet development is the lack of efficient and affordable high-quality networks and connections, an obstacle the CLECs were working to remedy. 145 Taking away a source of income related to carriage of ISP traffic will reduce motivation to carry the traffic and to upgrade the network. This would be contradictory to Congress's concern about the availability of advanced services. 146

Technology has advanced to the point where the cost of a call varies little with distance. 147 It is increasingly problematic, therefore, to base any argument relating to the internet on the location of the website or host computer. Packet-switched internet traffic is transmitted without tying up a circuit, so "minutes of use" is an unnecessary distinction. 148 Because of these developments—the internet being just one of many at this time—a pricing scheme that continues to differentiate between local and interexchange traffic will only become more outdated with time. The current rate structure will quickly become obsolete as communications pricing becomes bandwidth-based rather than distance- and time-based. 149 Implementing that type of pricing strategy at this time will only perpetuate an outdated perspective on the telecommunications arena.

Speculation as to prospective methods of transmission and pricing lead to a conclusion that the network of the future will be very different from the present PSTN. Fiber-optic upgrades to the PSTN and "dumb" switchless routing will bring Moore's law 150 to telecommunications transmission, as the cost of moving data over the network drops exponentially. 151 The cost to the consumer of transmission over the PSTN will become virtually free, providing a PSTN that resembles the internet more than it resembles the current telecommunications infrastructure. 152

In addition, the internet has been bringing about the "death of distance" in the telecommunications market. 153 This convergence will necessitate a complete restructuring of the pricing and compensation structures for telecommunications services: the structures for the rates of transport and termination of local calls and that of transport and termination of long-distance calls should be the same. 154 Creating an exception for

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148 Unlike the traditional circuit-switched network, packet switching does not tie up a dedicated end-to-end path with each transmission. See Digital Tornado, supra note 7, at 17. Because each packet is sent individually by the most efficient path, many different communications can be routed over the same facilities. See id.


145 Although companies have been upgrading the PSTN to include fiber-optics in the network, the most pressing problem is the bottleneck caused by the twisted copper wire connection in the "last mile" to the customer's home, designed for nothing more than a circuit of two human voices. See Frances Cairncross, The Death of Distance: How the Communications Revolution Will Change Our Lives 52 (1997).

146 See 47 U.S.C. §230(b) (1994 & Supp. II 1997) and discussion supra note 117; see also 47 U.S.C. §157 (encouraging the development of advanced telecommunications capability by removing barriers to infrastructure development); see generally 706 Report, supra note 135 (implementing the require-
ternet services and devising a new way to compensate for its carriage does not serve to bring regulation closer to that convergence, but to complicate matters and push it farther away.

V. CONCLUSION

The internet helps achieve the procompetitive goals of the 1996 Act by providing both an arena for new services and competition to existing services. At this point, the end of the beginning for the regulation of internet traffic, the FCC must act to ensure that the internet is unhampered by outdated and inefficient regulatory policies.

At this time, the FCC’s best option is to make certain its actions do not prompt state decisions that remove the incentive to carry internet traffic. When the outmoded dichotomy between local

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155 See Digital Tornado, supra note 7, at ii.