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

In the Matter of)
)
America's Carriers Telecommunication)
Association ("ACTA")) RM-8775
)
Petition for Declaratory Ruling, Special Relief)
and Institution of Rulemaking)

REPLY COMMENTS OF INTEL CORPORATION

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Intel Corporation ("Intel"), by its undersigned counsel and pursuant to Section 1.405 of the Commission's Rules, 47 C.F.R. § 1.405, hereby respectfully submits the following Reply Comments concerning the Petition for Declaratory Ruling, Special Relief and Institution of Rulemaking filed by the America's Carriers Telecommunication Association ("ACTA Petition").

I. Introduction and Summary

Intel strongly supports the initial Comments in opposition to the ACTA Petition filed by Business Software Alliance ("BSA") and the Information Technology Industry Council ("ITI"), and agrees with BSA, ITI, and the majority of commenters that the Commission should deny ACTA's Petition and refuse to regulate the Internet, Internet service providers, or software publishers. Such regulation would contradict the express intent of Congress, as stated in the Telecommunications Act of 1996 ("the 1996 Act"), that the Internet remain wholly outside of the Commission's jurisdiction.¹

¹ See Communications Act of 1934, §§ 230(b)(1) and (2), as amended by the 1996 Act.

Intel specifically files this reply to express its emphatic opposition to the suggestion of certain commenters² that information service providers and other enhanced service providers (“ESPs”), including Internet service providers (collectively, “ISPs”), be subject to the Commission’s access charge³ regulations.⁴

Intel and the U.S. high-technology industry thrive on innovation and growth, as Congress recognized in the 1996 Act.⁵ As the FCC is subjected to a barrage of telco comments urging the application of circuit-switched based access charges to the world of computers and the Internet,⁶ Intel is compelled to urge the Commission to bear in mind the following central policy question: whether or not applying access charges to ISPs will promote growth and innovation in the monopolistic local exchange networks. Intel submits that applying access charges to the competitive and dynamic ISP market will *not* promote growth and innovation in the local exchange; instead, it

² See Comments of Southwestern Bell Telephone Company (“SWBT”) at 5; Comments of Pacific Bell and Nevada Bell at 8-15; Comments of US WEST at 2-3; Comments of AT&T at 5; Comments of LDDS at 4.

³ Access charges are currently paid by interstate common carriers, principally interexchange carriers (“IXCs”), to local exchange carriers (“LECs”) for use of the local exchange network.

⁴ The proceeding at hand is not the appropriate forum to address access charge issues, especially inasmuch as the ACTA Petition did not seek a change in the access charge rules. Rather, ACTA sought to classify certain software providers as “common carriers,” which would have the effect of making them liable for access charges under the existing rules. The initial comments have amply demonstrated that the relief sought by ACTA is inappropriate. The Commission plans to address access charges later this year, and Intel submits that at that time, the Commission will be able to thoroughly address access charge regulation after obtaining a full and complete record.

⁵ Communications Act of 1934, § 230(a)(4), as amended by the 1996 Act.

⁶ In the 1996 Act, Congress defined the Internet as “the international computer network of both Federal and non-Federal interoperable packet switched data networks.” *Id.* at § 230(e)(1).

will reward the LECs' ongoing failure to respond to the needs of the personal computer users for high speed, digital data communications.

Imposing access charges to ISPs would be completely contrary to the public interest for the following reasons:

- First, ISPs' payment of access charges would constitute a double recovery for LECs, because end users and ISPs already pay LECs tariffed rates and other surcharges for use of local exchange networks.
- Second, the FCC's imposition of access charges would give LECs an incentive to preserve the existing telephone network as a technical and economic bottleneck limiting access to the Internet, rather than giving them more appropriate economic incentives to deploy newer, higher-bandwidth technologies.
- Third, Intel is concerned by the lack of innovation in the monopoly local exchange, and the shift in the LECs' focus away from their core business. Intel submits that applying access charges to ISPs will perpetuate the lack of innovation in the local exchange.
- Fourth, the existing local exchange networks were built for voice traffic and are poorly suited to meet the needs of digital communications. Under cost-causation principles, computer network data should not be encumbered by access charges for access to a network that ill-suits the needs of data communications.
- Fifth, the application of access charges to ISPs would impede the development of innovative technology, and retard the dramatic advancements brought about by the Internet.
- Sixth, the Commission should not address access charge reform in this proceeding because of the lack of adequate notice to interested parties and an insufficient record.

II. The Application of Access Charges to ISPs Would Wrongly Reward LEC Inefficiency and Lack of Innovation at the Expense of End Users and ISPs

The LECs are promoting the imposition of inflated, per-minute access charges due to their underlying concern that data communications might place an overwhelming strain on their primarily

analog circuit-switched networks.⁷ The existing primarily analog circuit-switched telephone network was designed to meet demand for voice communications, and does that fairly well, but it is not suited to satisfy the burgeoning demand for high speed, digital data transmissions. The incumbent LECs have generally failed to invest in digital technologies that could increase the capacity of their networks and accommodate the needs of Internet and ISP end users.

The problem of LEC unpreparedness for the increasing demand for data transmission services will be compounded, and not resolved, by imposing access charges on the use of the Internet and other ISP services. The application of such charges is unnecessary and inequitable, because end users and ISPs already pay for their use of the circuit-switched network, and the imposition of access charges would therefore amount to a double recovery. The extension of access charges to ISPs would also send LECs precisely the wrong economic signals. It would reward them for keeping data traffic on an analog network that was not designed, and that is still far from optimal, for that purpose, and thereby discourage LECs from making investments to deploy new technologies that are more suited for the high-speed, digital environment of the Internet and other information services.

A. Per-minute Access Charges Were Not Designed or Intended for the New Era of Digital Communications

Per-minute interstate switched access charges were created by the FCC at the time of the Modified Final Judgment (“MFJ”) divestiture of the Bell system to ensure that long distance usage paid for 1) the switching and transport of traditional long distance analog voice calls as a part of the origination and termination of the calls on LEC facilities, and 2) the fixed costs of the local loop.

⁷ See, e.g., Comments of Pacific Bell and Nevada Bell at 12.

The primary purpose of access charges was to replace contribution to these LEC costs that had previously been provided through AT&T's interstate long-distance rates; thus, the access charge rules applied to interstate long-distance carriers, but not to private networks and other non-common carriers.

ISPs have conducted their businesses by establishing local points of presence in most cities and local calling areas to receive calls from their customers. The Commission has not applied call origination access fees to ISPs, both because ISPs are not communications common carriers, and also because most calls to ISPs terminate locally at ISPs' facilities. These calls are then carried by private networks to distant computers or databases.⁸ In the case of Internet providers, calls are carried to a computer belonging to the Internet service provider.⁹ Applying access charges to ISPs would mean that whenever an end user accesses an Internet service provider, the provider would pay the LEC originating access charges, and this cost would necessarily be passed on to the end user. For end users, such charges would be reflected as per-minute usage charges for local exchange calls involving modems. The creation of per-minute usage charges for local exchange calls involving modems was not the FCC's intended purpose in adopting access charges.

In the past, calls for access charge reform have been motivated by the effects of the access rate structure, including the overstatement of total costs attributable to the interstate category (and

⁸ *Computer II Final Decision*, 77 FCC 2d 384, 387 (1980) (subsequent history omitted). See Comments of Commercial Internet eXchange Association at 7-8.

⁹ The "Internet" is a cooperative system of interconnected computer networks. No individual entity or person owns the Internet; it is a network of computer networks. Rather, an Internet access provider operates a computer network that is part of this interconnected system, and offers access to its particular facilities. Since the provider's network is connected to the Internet, any user who obtains access to that network can also access the rest of the Internet.

the commensurate understatement of intrastate costs). thus making interstate long distance use subsidize local exchange rates.¹⁰ Furthermore, large end users have been able to largely escape access charges by utilizing dedicated private networks. The FCC has therefore been considering the reduction of all interstate switched access charges, and in particular, reducing the portion of *per-minute* access charges that recovers fixed local loop costs. Increasingly, long distance carriers have been questioning the very existence of the access charge structure. As the FCC has stated, “under a long-term competitive paradigm, it is not clear that there can be a sustainable distinction between access for the provision of local service and access for the provision of long distance service.”¹¹ In the face of these pressures, it seems to make little sense to create a new distinction between access for the provision of voice services and access for the transmission of data, with a new set of rates and new incentives and impetus for “bypass” and arbitrage.

B. End Users (Including ISPs) Currently Pay for Their Use of Local Exchange and T-1 Facilities

At the heart of the LECs’ arguments on behalf of access charges is the notion that end users and ISPs are somehow obtaining the LECs’ services “for free,” and that the Internet’s vibrant expansion has been at the expense of LECs and IXCs.¹² On the contrary, Internet end users and providers of enhanced and information services already pay tariffed rates and other surcharges for local exchange access. These tariffed rates generally are the rates for local exchange services and

¹⁰ See Comments of Sprint at 4 (“There is no dispute that interstate access charges are far above economic cost.”)

¹¹ *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, FCC 96-182 (released April 19, 1996) at 52 (“*Interconnection NPRM*”).

¹² See Comments of Pacific Bell and Nevada Bell at 8.

local private lines, which are regulated by the States, not by this Commission. The LECs' arguments seem to imply that the States are (for unexplained reasons) incapable of setting local rates that would permit the LECs to recover their costs in providing services to end users of ISP and Internet services, and that therefore this Commission should step in and usurp the role of the State commissions. Intel believes that any such radical overthrow of traditional jurisdictional separations is neither permissible under the law nor justified as a matter of fact.

In addition, the institution of access charges for ISPs would amount to double recovery of LECs' costs. ISPs would be forced to pass the costs of access charges along to their customers—who would pay twice for accessing the Internet through the local exchange network. If tariffed rates and surcharges do not accurately reflect the cost of local exchange service, the LECs are free to propose corrective measures before the State commissions. If local exchange service is being subsidized by IXCs, then end users and ISPs are not to blame. Instead, LECs should appropriately price their services to ensure the most efficient use of copper loops. End users, ISPs, and the nation as a whole should not be punished for the remarkable evolution of the Internet by the imposition of access charges.

C. Imposition of Access Charges Would Provide Economic Incentives to the LECs to Continue Their Failure to Innovate

1. The Demand for High Bandwidth Data Transmission Services is Enormous and Unmet by Incumbent LECs

At the present, there is a large, unfulfilled need for affordable, high bandwidth services.¹³ Many residential users are no longer satisfied by plain old telephone service (“POTS”), which is

¹³ See Comments of ITI filed May 16, 1996, and Comments of CPT filed May 30, 1996, in CC Docket No. 96-98, *Interconnection NPRM*.

highly inefficient for the transmission of data communications. The explosive price-performance improvements in computer power combined with the increasing commercial and societal reliance upon the Internet and other bit-intensive applications have created an enormous opportunity for both incumbent LECs and new competitive providers to satisfy consumer demand for high bandwidth transmission services.¹⁴

Paradoxically, the market for digitized access to the local exchange network, such as integrated digital services network ("ISDN")¹⁵ and asymmetrical digital subscriber line ("ADSL"),¹⁶ has been virtually unaddressed by the incumbent LECs. For example, some estimates indicate that in all of the Regional Bell Operating Companies' ("RBOCs") territories combined, there are fewer than 400,000 ISDN users,¹⁷ significantly less than half the number in Germany, which has almost 1 million ISDN customers among its 80 million residents.¹⁸ To the extent that LECs are offering

¹⁴ The number of on-line and Internet users in the United States is estimated to be between 16 million and 20 million, and the number is growing rapidly. See Peter H. Lewis, *In a Recount, Cyber Census Still Confounds*, N.Y. Times, April 17, 1996, at D1 (unrelated correction issued April 19, 1996).

¹⁵ ISDN is a technology that utilizes one, two, or twenty-four user channels to send information in digital form at a rate of 64 kbps per channel. It is the first step to digitizing LECs' copper loops; but, although ISDN sends digital signals, it still uses circuit-switching technology.

¹⁶ ADSL is a technology that utilizes local loops to provide video or data services by transmitting digital information from the network to the user at rates from 1.5 Mbps to 6 Mbps and transmitting from the user to the network at 576 kbps. A similar technology, HDSL (High-Bit-Rate Digital Subscriber Line) allows DS1 level transmission on two copper wire pairs or half of a DS1 transmission capability on a single copper wire pair. ADSL and HDSL (collectively, "XDSL") provide digital data transmission 100 times faster than a 14 4/28.8 kbps modem.

¹⁷ *The War of the Wires (or, The Bells v. the Internet)*, The Economist, May 11-17, 1996, at 59-60.

¹⁸ Germany's population as of 1994 is reported as being 81.5 million, see EU VAEMECUM(1), Basic Statistics 1994 EUROSTAT. BRI ISDN lines in Germany were expected to be 950,000

ISDN services, they are seeking to impose unreasonable, usage-based, per-minute charges, in addition to monthly charges, which would retard the rapid growth of data communications. These LEC proposals have been reviewed, or are currently under review, by various state commissions.¹⁹

2. Incumbent LECs Have Generally Failed to Invest in the Creation of Networks Well-Suited for the Needs of Digital Communications

Analog circuit-switched networks dominate the local exchange. Circuit-switching requires that a call occupy a circuit, a fixed and scarce transmission link, all to itself. ISDN is also a circuit-switched technology, but it offers a significant bandwidth improvement over POTS. Its channel functionality (2B circuit-switched channels + 1D packet-switched channel) affords superior bandwidth and circuit management engineering opportunities that conserve B channel circuits.²⁰

By contrast, digital packet-switching routes digital data by breaking up the data into bits (which are 1s and 0s) contained in packets at one end and reassembling the bits and packets at the other end. Data communications can be text, graphics, voice, audio, radio, photographs, video—almost any type of communication imaginable. However, “bit are bits,” and indistinguish-

according a Dataquest estimate in June 1995.

¹⁹ See, e.g., US WEST ISDN Rate Proposals before the Washington Utilities and Transportation Commission, October 3, 1995, in Rebuttal Testimony of Merlin Jenson, Docket No. UT95-0200 (proposal rejected and withdrawn); Decision of the New Mexico Corporation Commission, Docket No. 95-769-TC (May 13, 1996); Proceedings before the Utah Public Service Commission, Docket No. 95-049-T20. See also Pacific Bell’s Application to increase ISDN rates, before the California Public Utilities Commission, Docket No. A95-12-043. The proposed flat-rate ISDN tariffs of US WEST and the other RBOCs filed in these states range from \$75.00 to \$249.00 per month.

²⁰ ISDN also represents the first step in digitizing the local loop.

able from one another as they are transmitted in large volumes at high speed.²¹ Significantly, each packet occupies a transmission path only for a fraction of a second, and can immediately be followed by another packet sent by a different user to a different destination. Thus, packet-switching is far more efficient in terms of transmission capacity consumption than circuit-switching.

The growth in data communications and the spread of affordable computing power to the home delivered by the highly competitive ISP and customer premises equipment (“CPE”) markets over the past decade appear to have caught the LECs off guard. Their loops remain encumbered with “load coils” (needed on certain loops for analog service) and “bridged taps” (a technique used to reduce the cost of adding analog POTS lines), both of which interfere with digital transmission. Even for the provision of more recent innovations, such as call-waiting, three-way calling, and caller ID, the RBOCs have largely invested in circuit-switching technology.²²

Ironically, the Internet itself is proof that packet-switching is far faster, more efficient, and consequently capable of providing far more user capacity than circuit-switching. Some LECs have prematurely declared their copper loops obsolete, although the use of copper to provide analog POTS represents about 1% of copper’s capabilities--XDSL technologies can transmit several megabits of digital traffic per second. Belatedly, the LECs appear to be realizing the potential of the Internet.

²¹ For this reason, regulation of the provision of voice services over the Internet is highly impractical, if not technically infeasible. See Comments of Sprint at 3; Comments of Microsoft at 9; Comments of BBN Corporation at 3; Comments of Center for Democracy and Technology; Comments of Computer Professionals for Social Responsibility and the Benton Foundation at 12-15; Federal Networking Council at 1.

²² Bell Atlantic, for example, between 1986 and the present, spent “over \$3 billion” on circuit switches. See, e.g., Complaint of Bell Atlantic, *Bell Atlantic v. AT&T Corporation and Lucent Technologies, Inc.*, filed February 14, 1996 in the U.S. District Court of the Eastern District of Texas, Texarkana Division.

But instead of fostering the growth of the Internet, LECs would rather seek the imposition of access charges on ISPs to pay for past investments in circuit-switching technology--investments that were incurred for voice traffic.

Due to the analog nature of LECs' networks, LECs do not even have an accurate estimate of the extent of data transmission use of their facilities. The LECs have apparently made no attempts to measure the data traffic on their networks.²³ The failure of LECs to gauge customer demand and use of their networks has, in part, caused the LECs to refrain from innovation and avoid meeting consumer needs for affordable, easily available, high-bandwidth digital communications.²⁴

Undoubtedly, the LECs' requests for imposition of access charges are an effort to extract additional revenue from the growing use of their circuit-switched networks for access to Internet and on-line services. From an economic policy standpoint, this would be precisely the wrong action for the Commission to take. It would reward the LECs for essentially providing only POTS over their existing network structure and refraining from re-engineering their existing networks (and,

²³ See Pacific Bell's Response to Intel's First Set of Data Requests, Docket Nos. A.95-12-043 and C.96-02-002, before the California Public Utilities Commission, filed March 28, 1996, at 65-66 ("Request 38: Prior to using ISDN, what percentage of such customers were using POTS with POTS modems for their PCs [personal computers]? Response 38: Pacific Bell does not have information on modem use over POTS lines"; "Request 39: Has Pacific Bell conducted any studies of (or is otherwise aware of any data compiled concerning) the hours of POTS usage by PC users using POTS modems? Please provide documents which relate to such studies or data compilations. Response 39: Pacific Bell does not have the requested information.") Compare Comments of Pacific Bell and Nevada Bell at 11 ("[w]e believe that on-line data calls . . . could comprise up to 25% of the traffic Pacific Bell will carry by the end of the decade") (emphasis added).

²⁴ In resisting the deployment of affordable and easily obtainable ISDN, US WEST has said that the demand for ISDN is 0.5% of all access lines, growing to less than 5% in five years. Rebuttal Testimony of Merlin Jenson for US WEST before the New Mexico Corporation Commission, Docket No. 95-769-TC (Jan. 5, 1996) at 4.

artificially suppressing demand for data transmissions by raising the price), and would dampen their economic incentive to deploy newer, more efficient technologies such as ISDN and ADSL that would loosen the bandwidth bottleneck and assure the United States of a telecommunications network capable of meeting the needs of the future, rather than those of the past. The FCC should reject the LECs' invitation to restrain the demand for digital communications and should not reward their lack of innovation by burdening data communications with costs that were incurred for traditional voice telephony needs.

3. Instead of Imposing Access Charges on ISPs, LECs Should Join the ISP and CPE Industries in Pursuing Innovation and Growth

In his book, *The Road Ahead*, Bill Gates, the CEO of Microsoft, stated:

For more than 100 years telephony has been quietly making its profits as a regulated monopoly. Suddenly the RBOCs must become growth companies, which is about as radical as turning a tractor into a sports car. It can be done (just ask the folks at the Lamborghini Company, which makes both), but it's hard to do.²⁵

However hard it is for the LECs to keep up with the ISP and CPE industries, they must begin to do so rapidly, rather than relying on obsolete regulatory revenue mechanisms and complaining about "unforeseen" effects of growth in demand on their networks.²⁶ Congress recognized the urgent need for competition--which breeds innovation and growth--by passing the 1996 Act, ending the regulatory policies that held back the communications industry for decades. To that end, the Commission should not be a party to any attempt to drag the communications industry back into the

²⁵ William Gates, *The Road Ahead* (1995) at 241

²⁶ See, e.g., Comments of Pacific Bell and Nevada Bell at 10.

past. If the Commission resists imposing access charges on ISPs, it will further the public interest by encouraging LECs to innovate and re-engineer their networks to meet the needs of consumers.

III. The Application of Access Charges to ISPs Would Impede the Advance of Technology and the Diversification of Services

The Internet, and the numerous services related to the Internet, have proven to be an amazing success story. As Congress has expressly recognized in the Telecommunications Act of 1996, such rapid, sweeping changes would not have been possible if ISPs were regulated. Such detrimental regulation includes the access charge regime, which the Commission long ago determined should not apply to ISPs (then known primarily as ESPs).²⁷

The LECs' virtual monopoly over the provision of local exchange service is universally considered directly at fault for stunting technological advancements in the communications industry. As the Commission knows all too well, regulation that indulges monopoly-based revenue recovery, unrelated to cost-causation principles, directly limits technological progress. Internet services still have a long way to go, and their possibilities for our nation's economy remain largely untapped. Web site content consists mainly of text, not video. The lack of affordable digital bandwidth in the local exchange is a serious constraint on the advancement of the ISP and CPE industries and on the satisfaction of consumers' needs. The imposition of access charges will not promote innovation in the local exchange, and will retard growth in the ISP and CPE industries as well as deter on-line use.

²⁷ See note 8, *supra*.

IV. The Proceeding at Hand Is an Inappropriate Forum to Address Access Charge Regulation

The FCC has announced its intention to address access charge issues in a separate rulemaking proceeding, to be instituted later this year.²⁸ It would be inefficient and impractical to consider the issue of access charges for Internet services in isolation from the other issues relating to access charge revisions, such as carrier common line charge ("CCLC") reform. The current proceeding is therefore an inappropriate forum for the Commission to review its access charge structure.²⁹

Any Commission decision regarding access charges would have substantial implications for the entire computer and communications industries. Interested parties should be provided adequate notice and a fair opportunity to prepare comments on these important issues. The Commission also needs a complete record to adequately address access charges. For these reasons, the Commission should decline to reexamine its access charge regulations at this time.

V. Conclusion

The Commission should refrain from imposing any regulation on the Internet in accordance with the will of Congress. The Commission should also refuse to impose access charges on ISPs. In so doing, the Commission would ensure that: 1) an outdated regulatory structure would not be foisted on a vibrant, growth-oriented industry; 2) the LECs would not be rewarded for their lack of

²⁸ See *Interconnection NPRM* at 52.

²⁹ Some commenters also suggest that ISPs contribute to the universal service fund. See, e.g., AT&T at 6-7. The Commission has already undertaken a proceeding to review universal service, and need not take up the issue here. See *Federal-State Joint Board on Universal Service, Notice of Proposed Rulemaking*, CC Docket No. 96-45 (rel. March 8, 1996).

innovation in the local exchange; 3) future generations would continue to enjoy an ever-increasing diversity of on-line services and products; and 4) the Internet would continue to develop to meet the needs and expectations of the public.

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