

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

In the Matter of)	
)	
Petition of SBC Communications Inc.)	WC Docket No. 04-29
For Forbearance from the Application of)	
Title II Common Carrier Regulation to)	
IP Platform Services)	

REPLY COMMENTS OF SBC COMMUNICATIONS INC.

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SBC Communications Inc., and its affiliated companies (collectively, “SBC”) respectfully submit these reply comments in support of SBC’s petition for forbearance from the application of Title II common carrier regulation to IP-enabled services.

INTRODUCTION AND SUMMARY

On February 5, 2004, SBC filed petitions for declaratory relief and for forbearance that reflect a two-step proposal for establishing a comprehensive, unregulatory framework for IP-enabled services.^{1/} In the declaratory ruling petition, SBC asks the Commission to declare that IP-enabled services are interstate information services under the Act and thus are not subject to Title II common carrier regulation. This outcome is consistent with Congress’s directive that the Internet remain “unfettered by Federal or State regulation” and with the Commission’s

^{1/} Although SBC’s petitions referred to the class of services as “IP platform services,” SBC here uses the Commission’s term “IP-enabled services.” Whichever term is used, the Commission should define the scope of services at issue to include only those services that reach or leave the end user’s premises in IP format and the IP-specific facilities over which they are provided, for the reasons stated in SBC’s comments in the Commission’s rulemaking proceeding. *See* SBC IP-Enabled Services NPRM Opening Comments at 20-25. Those commenters that contest SBC’s proposed definition do so based on the mistaken view that it encompasses legacy facilities. *See, e.g.,* AT&T Comments at 52. As explained further below, SBC has expressly disavowed any suggestion that it seeks to insulate legacy facilities from regulation, and this objection is merely a straw man. *See infra* Section II.A.

pronouncement that the “great majority” of IP-enabled services “should remain unregulated.”^{2/} In the forbearance petition, SBC asks the Commission to reinforce that ruling by taking the modest additional step of forbearing from applying Title II common carrier regulation to these services to the limited extent such regulation might otherwise be found to apply. Granting that forbearance petition would serve as a “belt-and-suspenders” means of achieving the unregulatory framework sought by SBC’s declaratory ruling petition and proposed in the *IP-Enabled Services NPRM* and also ensure that this framework encompasses any specific IP-enabled service that may appear to bear the characteristics of a telecommunications service rather than an information service.

By taking these steps in tandem, the Commission will eliminate any doubt concerning the unregulated status of *all* IP-enabled services, while promoting the goals underlying the *IP-Enabled Services NPRM* and embodied in the 1996 Telecommunications Act (the “Act”) and Commission precedent. Moreover, this two-pronged proposal is consistent with the Commission’s approach in the *Cable Modem Declaratory Ruling*. There, the Commission concluded that cable modem service is an “information service” outside the scope of Title II common carrier regulation, but also prudently waived the application of the *Computer II* requirements and proposed forbearing from the application of *any* Title II common carrier regulation. Numerous commenters in the rulemaking proceeding who advocate the establishment of an unregulatory framework for IP-enabled services and stress the availability of the Commission’s forbearance authority to accomplish that goal support this approach.

^{2/} 47 U.S.C. § 230(b)(2); Notice of Proposed Rulemaking, *IP-Enabled Services*, 19 FCC Rcd 4863, 4886 ¶ 35 (2004) (“*IP-Enabled Services NPRM*”). SBC introduced its declaratory ruling petition into this docket as an attachment to its forbearance petition.

However, some of these commenters urge the Commission to deny SBC's forbearance petition. The general tenor of that opposition reveals a fundamental misconception of the relief that SBC seeks. As a result, these oppositions challenge positions that SBC does *not* take and that the Commission need not address in this proceeding. In particular, these opponents primarily argue that the Commission should deny SBC's petition in light of the importance of continued regulation of ILEC facilities, with a particular focus on the *Computer II/III* and section 251 unbundling obligations. They generally contend that the elimination of these requirements would unleash anticompetitive behavior that would ultimately devastate the market for IP-enabled services. But their arguments in this regard attack straw men. SBC's petition does not seek forbearance from the application of existing Title II regulations to legacy services or facilities. Rather, SBC's petition is limited to the application of Title II common carrier regulation to *IP-enabled services and the IP platforms over which they are provided*. For these services and facilities, unbundling would be inappropriate and unjustifiable, because the market for emerging IP-based services is increasingly competitive, and low barriers to entry allow a range of entities to provide these services in many different ways. In fact, the Commission's recognition in the *Triennial Review* proceeding that the competitive state of the broadband market made it inappropriate and unnecessary to depress investment incentives by requiring forced unbundling should apply with equal if not greater force to the services and underlying facilities at issue here.

When these arguments are set aside, what remains are poorly reasoned conclusions about how the section 10 forbearance criteria are unsatisfied. In this regard, the opponents of SBC's petition face a fundamental problem: their *IP-Enabled Services NPRM* comments largely *support* the primary objective of SBC's petition. Indeed, the *IP-Enabled Services NPRM*

comments in general reflect a consensus that common carrier regulation of IP-enabled services: (1) is not necessary to ensure that charges, practices, classifications, or regulations are just and reasonable and are not unjustly or unreasonably discriminatory; (2) is not necessary to protect consumers; and (3) is not in the public interest.^{3/} Since this is precisely what is required to support forbearance, the Commission should grant SBC's forbearance petition.

DISCUSSION

I. FORBEARANCE IS CONSISTENT WITH THE GOALS OF THE ACT AND WOULD REINFORCE AN UNREGULATORY FRAMEWORK FOR IP-ENABLED SERVICES.

SBC's forbearance petition should be understood in conjunction with the relief that SBC seeks in its petition for a declaratory ruling and that the Commission contemplates in its pending *IP-Enabled Services NPRM*. As SBC explained in its declaratory ruling petition and in its *IP-Enabled Services NPRM* comments,^{4/} the Commission should, as a preliminary matter, declare that IP-enabled services are interstate information services under Title I of the Act that are generally exempt from Title II common carrier regulation.^{5/} This finding would be consistent with Congress's express goal of establishing and protecting a pro-competitive, unregulatory framework for the Internet and IP-based services. As Congress found in section 230 of the Act, "[t]he Internet and other interactive computer services have flourished, to the benefit of all

^{3/} See 47 U.S.C. § 160(a).

^{4/} To ensure a complete record in this proceeding, SBC attaches a copy of its opening and reply comments in the Commission's rulemaking as Exhibits A and B.

^{5/} As SBC and others have explained at length, the vast majority of IP-enabled services offer the inherent capability to generate, transform, store, and/or process information, and thus meet the statutory definition of an information service. See SBC IP-Enabled Services NPRM Opening Comments at 33-35; AT&T Comments at 15-16; BellSouth Comments at 26-28; Comcast Comments at 12; MCI Comments at 21-22; National Cable & Telecommunications Association ("NCTA") Comments at 8; Qwest Comments at 14; Vonage Comments at 23.

Americans, with a minimum of government regulation.”^{6/} Accordingly, Congress declared that it “is the policy of the United States” 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.”^{7/} Recognizing this statutory mandate, almost all industry participants in the Commission’s rulemaking, including AT&T, MCI, and other opponents of SBC’s forbearance petition, support insulating IP-enabled services from regulation. The Commission itself acknowledges Congress’s directives in the *IP-Enabled Services NPRM*, stating that “[IP-enabled services] have arisen in an environment largely free of government regulation, and the great majority, we expect, should remain unregulated.”^{8/}

While the Commission can and should achieve this result in the first instance by classifying IP-enabled services as information services, forbearance is an important instrument in achieving the same goal. Congress has expressly directed the Commission to use its forbearance authority to ensure that advanced services such as IP-enabled services are appropriately unregulated. Section 706(a) of the Act directs the Commission to “encourage the deployment on a reasonable and timely basis of advanced telecommunications capability,” and specifically authorizes the use of “regulatory forbearance” as a means of achieving that result.^{9/}

^{6/} 47 U.S.C. § 230(a)(4).

^{7/} *Id.* § 230(b)(2).

^{8/} *IP-Enabled Services NPRM* at 4886 ¶ 35; *see also, e.g.*, Notice of Proposed Rulemaking, *Local Competition and Broadband Reporting*, 14 FCC Rcd 18100, 18130 ¶ 61 (1999) (“The Commission does not regulate internet services[.]”); Report to Congress, *Federal-State Joint Board on Universal Service*, 13 FCC Rcd 11501, 11540 ¶ 82 (1998) (“We recognize the unique qualities of the Internet, and do not presume that legacy regulatory frameworks are appropriately applied to it.”).

^{9/} 47 U.S.C. § 157(a) notes.

To that end, the Commission has emphasized that section 706’s mandate to promote broadband investment through regulatory forbearance weighs heavily in favor of forbearing under section 10 from unnecessary regulation of advanced services,^{10/} which are properly understood to include IP-enabled services.^{11/} The Commission reiterates this principle in its *IP-Enabled Services NPRM*, where it recognizes that “[u]se of . . . [its] forbearance authority might be appropriate if the statutory classification accorded to a particular class of IP-enabled services leads to regulatory consequences that are neither necessary nor appropriate in the context of such services.”^{12/}

Not surprisingly, then, commenters widely agree that the Commission should use forbearance to achieve the sensible, judicially sustainable, and comprehensive unregulation of IP-enabled services, in conjunction with the efforts the Commission is undertaking in the *IP-Enabled Services NPRM*. For example, Cox Communications states that “the Commission can employ its forbearance authority to eliminate any unnecessary regulation of IP-based services,” and observes that “[f]orbearance is particularly appropriate when a service is in its nascent stages, and overzealous application of regulatory requirements developed for mature services

^{10/} See Memorandum Opinion and Order and Notice of Proposed Rulemaking, *Deployment of Wireline Services Offering Advanced Telecommunications Capability*, 13 FCC Rcd 24011, 24044-45 ¶ 69 (1998) (“[S]ection 706(a) directs the Commission to use the authority granted in other provisions, including the forbearance authority under section 10(a), to encourage the deployment of advanced services.”).

^{11/} See, e.g., Tenth Annual Report, *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, 19 FCC Rcd 1606, 1636 ¶ 39 (2004) (defining “advanced services” as “including digital video, high-speed Internet access, video-on-demand (‘VOD’), high-definition television (‘HDTV’), and Internet protocol (‘IP’) telephony over cable”).

^{12/} *IP-Enabled Services NPRM* at 4895-96 ¶ 47.

could be fatal.”^{13/} And 8x8 notes that the Commission can use this authority “to promote the public interest in having a vibrant market for” IP-enabled services.^{14/} As BellSouth explains, “It is critical that competing IP-enabled service providers already or potentially or even arguably subject to Title II obligations because of their provisioning of IP-enabled telecommunications services have the regulatory certainty that will promote investment and development in these services.”^{15/}

Forbearance would also help insulate the Commission’s unregulatory approach from litigation risks on appeal. A recent example of that risk is the Ninth Circuit’s reversal of the Commission’s ruling that cable modem service is an unregulated information service.^{16/} Although the Commission’s tentative exercise of its forbearance authority with respect to cable modem service remains intact, a more definitive exercise of that authority in the context of IP-enabled services would avoid the doubt that has nonetheless followed the Ninth Circuit’s decision. Furthermore, forbearance would allow the Commission to extend its unregulatory approach to the narrow class of IP-enabled services that might appear to have the characteristics of a telecommunications service and thus may appear to fail to meet the precise qualifications necessary for classification as an information service. As SBC stated in its forbearance petition, “To eliminate any doubt concerning the unregulated status of [IP-enabled] services, the

^{13/} Cox Comments at 22-23.

^{14/} 8x8 Comments at ii; *see also infra* note 43 (listing some of the other commenters that support forbearance in this context).

^{15/} BellSouth Comments at 59-60.

^{16/} *See Brand X Internet Servs. v. FCC*, 345 F.3d 1180 (9th Cir. 2003).

Commission should expressly forbear from applying Title II [common carrier^{17/}] regulation to them *to the extent that such regulation might otherwise be found to apply.*”^{18/}

Forbearance will also ensure that regulations specifically designed to address legacy services and facilities are not reflexively extended to IP-enabled services, regardless of their classification. Some opponents of SBC’s forbearance petition and commenters in the Commission’s rulemaking insist that even if IP-enabled services are classified as unregulated information services, the *Computer II* obligations should be interpreted to require incumbents to separately provide IP-enabled transmission services and facilities, in addition to legacy ones. Of

^{17/} SBC asks only that the Commission forbear from applying Title II common carrier regulation to IP-enabled services, rather than other Title II-based regulations that are not specific to common carriers. *See, e.g.*, SBC Forbearance Petition at 4 (stating that the forbearance criteria under section 10 of the Communications Act apply “to require forbearance from Title II common carrier regulation of IP platform services”). As SBC explained in its *IP-Enabled Services NPRM* comments, even where Title II is found not to apply (whether because IP-enabled services are classified as information services or because the Commission forbears from Title II regulation), the Commission retains non-carrier-specific authority under Title II over those services, and can address regulatory concerns that such services may raise using this non-carrier-specific authority and its ancillary authority. *See, e.g.*, SBC IP-Enabled Services NPRM Opening Comments at 50-52.

^{18/} SBC Forbearance Petition at 2 (emphasis added); *see also* SBC Declaratory Ruling Petition at 33-34 (“[T]o eliminate all uncertainty about the unregulated status of IP platform services, the Commission should exercise its authority under Section 10 of the Communications Act to forbear from any Title II regulation that might be argued to otherwise apply to these services or particular applications of them”). As SBC elaborated in its *IP-Enabled Services NPRM* comments:

To guard against the possibility that a given IP-enabled service, in its current form, may not appear to fall squarely into the information services category, the Commission should eliminate any doubt concerning the unregulated status of IP-enabled services by using its authority under section 10 of the Act to forbear from applying Title II common carrier regulation to these services (as well as Title III and Title VI regulation) to the extent such regulation might otherwise be found to apply.

SBC IP-Enabled Services NPRM Opening Comments at 38.

course, these commenters ignore the fact that the Commission has never suggested that IP functionality must be unbundled in this manner. But the Commission can and should use its forbearance authority to eliminate any uncertainty about this issue. Any other result would, like the imposition of Title II common carrier regulation generally, constrain the innovation and investment that are essential to the continued development of these technologies. Moreover, as explained below, the application of such requirements is wholly unnecessary given the low barriers to entry and widespread competition in this market.^{19/}

Simply stated, forbearance is an appropriate counterpart to the unregulatory framework being considered in the *IP-Enabled Services NPRM*. Because the conditions for forbearance are satisfied, as discussed below,^{20/} the Commission should exercise that authority to ensure an unregulated environment for IP-enabled services, a result that is compelled by sections 230 and 706 and the generally pro-competitive principles underlying the entire 1996 Act.^{21/}

^{19/} The state of competition in the provision of IP-enabled services is described in detail in the VoIP Fact Report filed in the Commission's rulemaking proceeding on May 28, 2004 and attached to these reply comments as Exhibit C. *See* Competition in the Provision of Voice Over IP and Other IP-Enabled Services, *IP-Enabled Services*, WC Docket No. 04-36 (filed May 28, 2004) ("VoIP Fact Report").

^{20/} *See infra* Section IV.

^{21/} *See* Preamble to the Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (stating that the purpose of the Telecommunications Act of 1996 is to "reduce regulation in order to . . . encourage the rapid deployment of new telecommunications technologies"); *see also, e.g.*, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, 18 FCC Rcd 16978, 16999-17000 ¶ 22 (2003) ("*Triennial Review Order*") (noting that the Commission can "encourage investment and innovation by reducing regulatory obligations") (citing Third Report and Order and Fourth Further Notice of Proposed Rulemaking, *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, 15 FCC Rcd 3696, 3705 (1999)).

II. THE OPPONENTS OF SBC'S FORBEARANCE PETITION MISREPRESENT THE RELIEF SBC SEEKS.

The oppositions of AT&T, MCI, and others to SBC's petition fail primarily because they attack positions that SBC does not take. They generally describe a petition that asks the Commission to eliminate all of SBC's existing obligations to provide competitors access to legacy services, removing all facilities that can be used to provide IP-enabled services from Title II regulation.^{22/} But SBC's petition specifically disavows any suggestion that it seeks to unseat established Title II obligations with respect to legacy services. To the contrary, the relief from Title II for IP-enabled services that SBC seeks in its forbearance petition is the same result these commenters endorse in the rulemaking proceeding.

A. Forbearance Will Have No Effect on Existing Requirements Relating to Access to Legacy Facilities.

Forbearing from the application of Title II common carrier regulation to IP-enabled services, as SBC requests, will have no effect on access to existing facilities that are *not* IP-enabled. To begin with, telecommunications carriers would retain any otherwise available access to the local loop as a UNE for the provision of telecommunications services that, in appropriate circumstances, can be used by ISP customers of those carriers to provide IP-enabled services. ILECs similarly would remain subject to any otherwise applicable obligations to

^{22/} See, e.g., AT&T Opposition at 5 (“SBC seeks to avoid its section 251(c)(3) obligation to provide unbundled access to local networks that could be used to provide IP transport”); MCI Opposition at 15 (urging the Commission to deny SBC's petition because “[c]ontinued regulation of bottleneck facilities in the physical layer remains necessary to ensure just, reasonable, and nondiscriminatory rates and to protect consumers”); EarthLink Opposition at 11 (asserting that SBC “seeks in this Petition the right to close its network”); California PUC Opposition at 8 (claiming that “the relief [SBC] requests goes directly to last-mile facilities”).

unbundle high-capacity loops.^{23/} ILECs also would remain subject to existing *Computer II* obligations to provide legacy transmission services, including any legacy services that could be used as a platform for IP-enabled services. SBC made this point abundantly clear in its petition, stating, “Concerns about barriers to entry and bottleneck facilities on the circuit-switched network thus are not implicated by this petition, which seeks forbearance solely with respect to the IP platforms that overlay those facilities and the related services.”^{24/}

The opponents of SBC’s petition, however, ignore these express limitations and reflexively proceed to frame SBC’s petition as another installment of an ongoing dispute between ILECs and CLECs about access to legacy services and facilities.^{25/} AT&T contends that

^{23/} To the extent that these commenters are resisting forbearance because they believe they should have a right under section 251 of the Act to obtain an ILEC’s IP-specific facilities (such as routers) as UNEs, the statutory language *already* forecloses that request: such facilities are not “used in the provision of a telecommunications service” and thus do not meet the definition of a “network element.” 47 U.S.C. § 153(29). In addition, many of these facilities are packetized and are thus not subject to unbundling based on the Commission’s decision regarding certain packetized facilities in the *Triennial Review Order*. See *Triennial Review Order* at 17149 ¶ 288. And even to the extent that those facilities are used for broadband *telecommunications* services, the Commission has specifically declared that forced unbundling of such facilities is inappropriate given the robustly competitive nature of that market and the significant investment disincentives created by the unbundling requirements. See *id.* at 17111 ¶ 213. For similar but distinct reasons, information service providers themselves cannot invoke rights to UNEs under section 251(c)(3), since those UNEs must be used for “the provision of a telecommunications service.” 47 U.S.C. § 251(c)(3). Such providers can, of course, partner with telecommunications carriers who provide the underlying transmission input.

^{24/} SBC Forbearance Petition at 9; see also SBC Declaratory Ruling Petition at 50 (“A Commission declaration limiting the scope of Title II regulation . . . would in no way affect existing regulation of legacy networks and services by either state or federal regulators, or predetermine the outcome of pending proceedings relating to legacy broadband services.”).

^{25/} The opponents of SBC’s petition even take this opportunity to argue for increased regulation of legacy ILEC facilities, repeating their shop-worn (and unpersuasive) advocacy that ILECs have (and will abuse) market power with respect to broadband transmission facilities. See, e.g., MCI Opposition at 9 (urging the Commission to “retain existing rules — and/or implement new rules — that constrain carrier from exercising market power in a manner that undermines competition for IP-based services and applications”); see also EarthLink Comments

SBC’s petition encompasses “core telecommunications facilities and services,”^{26/} and that if it is granted, “then the section 251(c) unbundling obligations would be eliminated for facilities, such as local loops[.]”^{27/} AT&T is wrong. “Core” telecommunications services and facilities are not IP-enabled and accordingly are expressly *excluded* from SBC’s petition.

SBC’s petition seeks relief from Title II unbundling obligations only for IP-enabled services and facilities for which no such obligations would be appropriate in the first place. This relief will flow from the Commission’s decision to classify IP-enabled services as information services regulated primarily under Title I of the Act. As a result of that classification, Title II unbundling obligations would not apply to most IP-enabled services and facilities, but only to any underlying legacy telecommunications used to provide them. SBC’s forbearance request is necessary for and limited to those IP-enabled services that may not appear to fall squarely within the Act’s definition of an information service, a category that should be extremely small.

AT&T’s contention that the relief SBC seeks “would apply to an extremely broad — and ever-growing — category of facilities and services”^{28/} is off the mark. Indeed, AT&T seems to recognize this in its *IP-Enabled Services NPRM* comments, where it argues that most IP-enabled services should be subject to the “deregulatory . . . information services regime” as a statutory matter because “*most* VoIP and other IP-enabled services offer the capability for net protocol

at 7-8. But as SBC has explained, ILECs are not dominant with respect to broadband transmission networks. *See, e.g.,* SBC IP-Enabled Services NPRM Opening Comments at 62-63; *see generally* VoIP Fact Report, App. A. The opponents of SBC’s petition attempt to show otherwise through mere repetition rather than actual facts. The Commission should not be distracted by this misdirected rhetoric or by these efforts to generate disputes where none exist.

^{26/} AT&T Opposition at 3.

^{27/} *Id.* at 15.

^{28/} *Id.* at 3.

conversion and include other enhancements beyond bare transmission that place them squarely within the information services classification.”^{29/} Since this is undoubtedly true, the range of services or facilities encompassed by SBC’s petition is likely to be increasingly *narrow*, as IP-enabled services will more obviously qualify as information services as they develop.^{30/}

In sum, nothing in SBC’s forbearance petition would threaten existing regulatory obligations for legacy services. While forbearance would certainly shore up a Commission ruling that IP-enabled services and facilities are subject only to Title I and exempt from most Title II obligations, the primary goals of forbearance would be to provide legal certainty and to afford that same relief to those few IP-enabled services and facilities that may not appear to readily qualify as information services.

B. SBC’s Forbearance Request Would Achieve the Precise Unregulatory Result That Its Opponents Themselves Endorse.

The opponents of SBC’s petition claim that “SBC is asking the Commission to forbear from applying an entire regulatory framework” to IP-enabled services, including “*each and every* provision in Title II and *each and every* Commission regulation [related] to basic transmission services and facilities, without exception or limitation.”^{31/} They claim that forbearance would shield IP-enabled services from even the “numerous Title II regulations that promote important public policy objectives, such as access to telecommunications services for the disabled, availability of E-911 emergency services, and assistance to law enforcement, even where those

^{29/} AT&T Comments at 15-16 (emphasis added).

^{30/} See, e.g., SBC IP-Enabled Services NPRM Opening Comments at 35.

^{31/} AT&T Opposition at 4; see also MCI Opposition at 4 (asserting that SBC asks the Commission to “forbear from applying *all* Title II regulation to *all* ‘IP platform services’”).

regulations (or similar regulations) are ultimately necessary to protect the public interest.”^{32/}

These claims are unfounded. As noted above, SBC’s petition is expressly intended to support and reinforce a Commission ruling that Title II *common carrier regulation* does not apply to IP-enabled services. Non-carrier-specific regulations in Title II, such as those relating to disability access, emergency calling, and universal service, would continue to apply to IP-enabled services providers, a point that is explained in detail in SBC’s *IP-Enabled Services NPRM* comments.^{33/}

This issue aside, the opponents of forbearance from Title II common carrier regulation suggest that SBC is seeking something unprecedented and unconscionable.^{34/} But in this respect, the oppositions are truly curious. The relief SBC seeks is the precise relief that the opponents of SBC’s petition enthusiastically advocate in the Commission’s rulemaking proceeding. For example, in its opposition to SBC’s petition, AT&T dismisses as “cavalier[.]” the notion that Title II requirements such as those set forth in sections 201 and 202 are not necessary to ensure that IP-enabled services are offered in a just, reasonable, and nondiscriminatory manner,^{35/} insisting that forbearing from applying those sections would be “contrary to the Commission’s prior reliance on sections 201 and 202 to discipline carriers, even in competitive markets.”^{36/} But in its rulemaking comments, AT&T speaks out the other side of its mouth, correctly noting that “intense competition” in the IP-enabled services market “should ensure that rates and terms for these services are just, reasonable and nondiscriminatory” without any need for Title II

^{32/} AT&T Opposition at 6.

^{33/} See SBC IP-Enabled Services NPRM Opening Comments at 50-52.

^{34/} See, e.g., AT&T Opposition at 19 (calling this an “extraordinary request”).

^{35/} *Id.* at 18.

^{36/} *Id.* at 20.

regulation.^{37/} Similarly, MCI complains that SBC has not adequately demonstrated “that Title II regulation is not necessary to protect consumers in the relevant geographic and customer product markets.”^{38/} But in the rulemaking, MCI argues at length that the Commission should refrain from applying a wide range of Title II regulations to IP-enabled services, including even those governing E-911 and disability access.^{39/}

In fact, there is an overwhelming consensus among industry commenters that IP-enabled services should be allowed to develop free of burdensome and unnecessary Title II common carrier regulation, and that economic regulation in particular is inappropriate for such services.^{40/} These commenters generally credit the Commission’s well-established policy of exempting information services and the Internet in particular from Title II regulation — adopted over twenty years ago^{41/} and reinforced by Congress in the Telecommunications Act of 1996^{42/} — for the enormous success of the Internet and IP-enabled services thus far.

^{37/} AT&T Comments at 17.

^{38/} MCI Opposition at 3-4.

^{39/} MCI Comments at 35-44.

^{40/} See, e.g., AT&T Comments at 15; MCI Comments at 21; BellSouth Comments at 26; Qwest Comments at 14; Time Warner Telecom Comments at 16.

^{41/} See, e.g., Final Decision, *Amendment of Section 64.702 of the Commission’s Rules and Regulations (Second Computer Inquiry)*, 77 F.C.C.2d 384, 387 ¶ 7 (1980) (“*Computer II*”) (“[T]he absence of traditional public utility regulation of enhanced services offers the greatest potential for efficient utilization and full exploitation of the interstate tele communications network.”).

^{42/} See, e.g., 47 U.S.C. § 230(b)(2) (declaring that “[i]t is the policy of the United States” 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”).

Further, commenters in the rulemaking broadly *agree* that the Commission can and should exercise its forbearance authority to ensure this result.^{43/} For example, AT&T suggests in its rulemaking comments that, if there are “VoIP services that do not squarely fit within the information services regulatory classification, and a telecommunications service classification would otherwise produce unnecessarily stringent regulatory outcomes, the Commission has broad authority to avoid that result — *through forbearance . . .*.”^{44/} AT&T’s simultaneous objection to SBC’s almost identical proposal in its forbearance petition is thus strange indeed.

Finally, the opponents of SBC’s petition argue that it makes no sense for SBC to advocate forbearance from all rules while noting that the Commission may conduct a rulemaking to determine whether any rules are necessary.^{45/} Once again, this simply mischaracterizes SBC’s position. SBC — and indeed AT&T, MCI, and many other commenters — argue that *certain* regulations may be appropriate for IP-enabled services, but that the Commission should proceed from a presumption of unregulation before identifying those specific regulations that may be necessary. It is clear that applying Title II common carrier regulation to IP-enabled services is not appropriate, but that has no relevance to whether IP-enabled services should be required to contribute to universal service, for example, or whether such services should permit E-911.^{46/} Thus, it is reasonable for the Commission to establish a presumption of unregulation by

^{43/} See, e.g., AT&T Comments at 16; 8x8 Comments at 19-20; BellSouth Comments at 56-57; Cisco Comments at 18; Cox Comments at 22-25; Level 3 Comments at 3-6; U.S. Department of Justice Comments at 7; Verizon Comments at 29-31.

^{44/} AT&T Comments at 16 (emphasis added).

^{45/} See AT&T Opposition at 8-9; MCI Opposition at 2; EarthLink Opposition at 19.

^{46/} See SBC IP-Enabled Services NPRM Opening Comments at 50-52 (discussing the Commission’s Title II non-carrier-specific authority to address various policy goals).

declaring IP-enabled services to be interstate information services and also forbearing, and then to determine whether and to what extent to apply narrowly tailored regulations to address specific concerns. This is the very approach that AT&T advocates in the Commission's rulemaking.^{47/} It is also the same one the Commission adopted with respect to cable modem service, where it first established (through a combination of a declaratory ruling and forbearance) that this service should not be subject to Title II and simultaneously initiated a separate rulemaking proceeding to identify any specific rules that should be applied.^{48/}

III. THE COMMISSION'S EXERCISE OF ITS FORBEARANCE AUTHORITY IN THE CABLE MODEM CONTEXT IS IDENTICAL TO THAT REQUESTED BY SBC REGARDING IP-ENABLED SERVICES.

As noted, the Commission already has tentatively recognized that the approach SBC proposes here is entirely sensible. In the *Cable Modem Declaratory Ruling*, the Commission adopted an approach very similar to that propounded by SBC here. It first concluded that cable modem services should be classified as Title I information services "and thus not subject to the obligations and requirements imposed on services subject to Title II."^{49/} The Commission also waived the application of the *Computer II/III* requirements for cable modem service, to the extent those requirements might otherwise apply.⁵⁰ The Commission then tentatively concluded

^{47/} See AT&T Comments at 16.

^{48/} See Declaratory Ruling and Notice of Proposed Rulemaking, *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities*, 17 FCC Rcd 4798, 4847-48 ¶ 95 (2002) ("*Cable Modem Declaratory Ruling*"), *rev'd on other grounds sub nom. Brand X Internet Servs. v. FCC*, 345 F.3d 1120 (9th Cir. 2003).

^{49/} *Id.*

⁵⁰ *Id.* at 4825-27 ¶¶ 45-47. As SBC has repeatedly argued in other proceedings, the Commission's decision to relieve cable modem service providers of Title II and/or *Computer Inquiry* requirements while maintaining those very same requirements for DSL service is a textbook example of arbitrary and capricious decisionmaking. The Commission should

that *if* cable modem service *were* classified as a telecommunications service, it would be in the public interest to forbear from regulating it under Title II in order to achieve the same unregulatory result.^{51/} The Commission posited that this approach would promote uniform treatment among like services, and further, that forbearance was appropriate because cable modem services were new and “still in [their] early stages[,] supply and demand are still evolving[,] and several rival networks” providing competing services were “still developing.”^{52/} Based on this rationale, the Commission tentatively concluded that each of the requirements for forbearance under section 10(a) was satisfied.^{53/}

On a more general level, as well, the Commission’s proposed approach in the *Cable Modem Declaratory Ruling* is consistent with SBC’s petition. For example, although AT&T and MCI complain that SBC did not identify each and every Title II common carrier regulation from which it was seeking forbearance,^{54/} the Commission tentatively adopted broad forbearance in the *Cable Modem Declaratory Ruling*, without specifying which Title II regulations were implicated.^{55/} That the Commission followed this approach makes perfect sense. As the

immediately remedy this inequity by declaring that DSL service is an interstate information service and not subject to Title II and/or *Computer Inquiry* requirements. *See, e.g.,* Comments of SBC Communications Inc., *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*, GN Docket No. 04-54, at 11-15 (filed May 10, 2004).

^{51/} *Cable Modem Declaratory Ruling* at 4847-48 ¶ 95.

^{52/} *Id.*

^{53/} *Id.*

^{54/} *See* AT&T Opposition at 16; MCI Opposition at 15.

^{55/} *Cable Modem Declaratory Ruling* at 4847-48 ¶ 95.

Commission recognized in the *Cable Modem Declaratory Ruling*, where a class of services generally will be treated as an unregulated Title I information service, “the public interest would be served by [a] uniform national policy that would result from the exercise of forbearance to the extent [the service] is classified as a telecommunications service.”^{56/} In such circumstances, it would elevate form over substance if forbearance could be granted only following an individual examination of every single provision of Title II standing alone. Just as classifying a service as an information service immediately and cleanly divorces that service from Title II common carrier regulation — while leaving the Commission free to apply appropriate regulatory requirements under its Title II non-carrier-specific authority and its ancillary authority — forbearance from all Title II regulation achieves the same result.

The efforts by the opponents of SBC’s petition to dismiss the relevance of the *Cable Modem Declaratory Ruling* are unavailing. AT&T argues that the *Cable Modem Declaratory Ruling* “cannot provide any support for SBC’s request” because the declaratory ruling portion of it was reversed on appeal.^{57/} AT&T’s reasoning is incorrect. The fact that an appellate court ultimately reversed the Commission’s conclusion that cable modem service is an information service underscores how important it is that the Commission exercise its forbearance authority as insurance against any such legal challenges. A concurring opinion in the Ninth Circuit’s decision acknowledged as much, noting that even if the court’s classification of cable modem service as a telecommunications service triggered certain regulatory obligations, “the FCC may

^{56/} *Id.*

^{57/} AT&T Opposition at 10.

choose to forbear from enforcing these regulations if it determines they are not necessary to promote competition or protect consumers.”^{58/}

AT&T further argues that, because the Commission’s decision was only tentative, it “has no precedential value.”^{59/} Whether or not that is so, the Commission’s prior analysis of an almost identical question — an analysis it has never repudiated — is surely persuasive. The fact that the Commission’s decision in the cable modem context was only tentative provides a cautionary tale for how the Commission should exercise its forbearance authority with respect to IP-enabled services: precisely because the Commission had only *tentatively* concluded that forbearance was appropriate, the unregulated status of cable modem service remains somewhat in doubt following the Ninth Circuit’s reversal. Had the Commission been less tentative in exercising its forbearance authority, that unregulated status would now be more secure.

AT&T’s additional suggestion that the *Cable Modem Declaratory Ruling* “contemplated only very limited forbearance”^{60/} is incorrect. The Commission proposed forbearing from “enforcement of Title II provisions and common carrier regulation[.]”^{61/} And AT&T’s related suggestion that the affected class of services in the *Cable Modem Declaratory Ruling* was vastly narrower than the issue framed in SBC’s petition is wrong. As noted above, the class of services actually unregulated through forbearance here should be quite small, as it would include only those IP-enabled services that may appear to bear the characteristics of telecommunications

^{58/} *Brand X*, 345 F.3d at 1138 (Thomas, J., concurring).

^{59/} AT&T Opposition at 11.

^{60/} *Id.*

^{61/} *Cable Modem Declaratory Ruling* at 4847-48 ¶ 95.

services and thus may not be definitively covered by the Commission's determination in the *IP-Enabled Services NPRM*.

IV. AS DISCUSSED IN SBC'S PETITIONS AND RULEMAKING COMMENTS, THE SECTION 10 FORBEARANCE CRITERIA ARE SATISFIED IN THIS CONTEXT.

The comments filed in the Commission's rulemaking further confirm that each prong of the three-part statutory test for forbearance is met. In fact, the central theme that runs through virtually all of the comments filed in the Commission's rulemaking is that IP-enabled services will continue to thrive and best serve the public only if they are affirmatively insulated from such regulation.

Section 10(a)(1): "[N]ot necessary to ensure that . . . charges, practices, classifications, or regulations . . . are just and reasonable and are not unjustly or unreasonably discriminatory." First, the rulemaking comments confirm that Title II common carrier regulation is not necessary to ensure that IP platform services will be offered in a just, reasonable, and nondiscriminatory manner.^{62/} As many commenters have explained in the Commission's rulemaking proceeding, the market for IP-enabled services is highly competitive and operates pursuant to cooperative business arrangements. Thus, market forces will continue to ensure that rates will be kept at reasonable levels and that providers' practices — with respect to consumers and to each other — will remain reasonable and nondiscriminatory. As AT&T itself explains, "intense competition" in the IP-enabled services market "should ensure that rates and terms for these services are just, reasonable and nondiscriminatory" without any need for Title II regulation.^{63/} The Commission has recognized that regulation of rates and practices through tariffing and similar common carrier

^{62/} 47 U.S.C. § 160(a)(1); *see also* SBC Forbearance Petition at 11.

^{63/} AT&T Comments at 17; *see also* VoIP Fact Report at 2-11.

regulation can actually harm an otherwise competitive market.^{64/} Forbearance would not distort, but would likely enhance, competition in the IP-enabled services market.

Section 10(a)(2): “[N]ot necessary for the protection of consumers.” Second, the rulemaking comments confirm that Title II common carrier regulation is not necessary to protect consumers, in light of the legal and market-based protections that already exist.^{65/} As many commenters in the Commission’s rulemaking proceeding note, federal and state laws of general applicability already restrict practices by IP-enabled services providers that might harm consumers, and forbearance would in no way undermine those safeguards.^{66/} Many commenters also point out that market forces already effectively constrain the behavior of providers in this

^{64/} See, e.g., Notice of Proposed Rulemaking, *2000 Biennial Regulatory Review; Policy and Rules Concerning the International, Interexchange Marketplace*, 15 FCC Rcd 20008, 20020-21 ¶ 18 (2000) (“requiring or permitting non-dominant carriers under a permissive detariffing policy to file tariffs impedes vigorous competition in the market for interexchange services by: (1) removing the incentives for competitive price discounting; (2) reducing or eliminating carriers’ ability to make rapid, efficient responses to changes in demand and cost; (3) imposing costs on carriers that attempt to make new offerings; and (4) preventing or discouraging consumers from seeking or obtaining service arrangements specifically tailored to their needs”); Further Notice of Proposed Rulemaking, *Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefor*, 84 F.C.C.2d 445, 478-79 ¶ 87 (1981) (“Applying the tariff requirements to competitive entities, however, has worked the perverse effect of imposing a measure which (1) is superfluous as a consumer protection device, since competition circumscribes the prices and practices of these companies, and (2) stifles price competition and service and marketing innovation.”); Memorandum Opinion and Order, *Orloff v. Vodafone AirTouch Licenses LLC*, 17 FCC Rcd 8987, 8998 ¶ 20 (2002) (declining to apply sections 201 and 202 in a competitive market).

^{65/} 47 U.S.C. § 160(a)(2); see also SBC Forbearance Petition at 10-11.

^{66/} See, e.g., Federation for Economically Rational Utility Policy (“FERUP”) Comments at 17 (“[e]xisting federal and state generic consumer protection laws are sufficient to address the vast majority of consumer protection issues”); see also AT&T Comments at 40-41; Comcast Comments at 9-10; 8x8 Comments at 29-31; Verizon Comments at 30 n.78; Cablevision Systems Comments at 13-14; Net2Phone Comments at 20; Voice on the Net (“VON”) Coalition Comments at 28-29.

highly competitive arena,^{67/} as evidenced by providers' efforts to work voluntarily to protect consumers' privacy interests.^{68/} As Comcast aptly explains in the rulemaking, "fully functioning markets do a better job of maximizing consumer welfare than regulators can ever hope to do,"^{69/} a point that the Commission itself has already acknowledged.^{70/} Indeed, consumers already have benefited greatly from the hands-off approach that has made the Internet's exponential growth possible: the wide array of choices among IP-enabled services that are available to consumers is perhaps the most compelling evidence that regulation is unnecessary to protect consumer interests in this context. Thus, forbearance from Title II common carrier regulation would not negatively affect consumers' interests.

Section 10(a)(3): "[P]ublic interest." Finally, the rulemaking comments confirm that forbearance is consistent with the public interest.^{71/} Title II common carrier regulation would impose significant costs on providers of IP-enabled services, discouraging new entrants from offering such services while driving existing providers to tailor services based on regulatory requirements rather than consumer needs. As many commenters recognize — again including

^{67/} See, e.g., VON Coalition Comments at 29; Net2Phone Comments at 21; Nuvio Comments at 8.

^{68/} See, e.g., AT&T Comments at 41 (discussing provisions of AT&T's voluntarily adopted privacy policy which protect consumer information from unauthorized disclosure or sharing).

^{69/} Comcast Comments at 10 (quoting Commissioner Kathleen Q. Abernathy); see also Net2Phone Comments at 20-21; Level 3 Comments at 39.

^{70/} First Report and Order, *Access Charge Reform*, 12 FCC Rcd 15982, 16094-95 ¶ 263 (1997) ("Competitive markets are superior mechanisms for protecting consumers by ensuring that goods and services are provided to consumers in the most efficient manner possible and at prices that reflect the cost of production. Accordingly, where competition develops, it should be relied upon as much as possible to protect consumers and the public interest.").

^{71/} 47 U.S.C. § 160(a)(3); see also SBC Forbearance Petition at 5-10.

some purporting to oppose SBC's forbearance petition — regulation (or even the mere threat of regulation) would harm the public interest by providing disincentives to continued innovation and thus limit the available range of IP-enabled services.^{72/} The Commission has consistently made the same observation.^{73/} Conversely, forbearance from common carrier regulation of IP-enabled services would further the public interest by removing barriers to investment and thereby promoting innovation and investment in these services.

Any failure to insulate IP-enabled services from harmful regulation would be contrary to the Commission's undeniable public interest obligation under section 706 of the 1996 Act to "encourage the deployment on a reasonable and timely basis of advanced telecommunications capability" through "regulatory forbearance" and "other regulating methods that remove barriers to infrastructure investment."^{74/} It would also be contrary to Congress's finding that "[t]he Internet and other interactive computer services have flourished, to the benefit of all Americans, with a minimum of government regulation"^{75/} and its corresponding directive that "the vibrant and competitive free market that presently exists" for these services be kept "unfettered by

^{72/} See, e.g., AT&T Comments at 15; MCI Comments at 21; BellSouth Comments at 29; Qwest Comments at 4-6; Time Warner Telecom Comments at 16.

^{73/} See, e.g., Second Report and Order, *Implementation of Sections 3(n) and 332 of the Communications Act, Regulatory Treatment of Mobile Services*, 9 FCC Rcd 1411, 1421 ¶ 25 (1994); *Cable Modem Declaratory Ruling* at 4802 ¶ 5 ("[W]e seek to remove regulatory uncertainty that in itself may discourage investment and innovation."); Notice of Proposed Rulemaking, *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, 17 FCC Rcd 3019, 3022 ¶ 5 (2002) (the Commission's "policy and regulatory framework will work to foster investment and innovation in these networks by limiting regulatory uncertainty and unnecessary or unduly burdensome regulatory costs").

^{74/} 47 U.S.C. § 157(a) note.

^{75/} *Id.* § 230(a)(4).

Federal or State regulation.”^{76/} And a failure to forbear here risks subjecting at least some IP-enabled services to Title II common carrier regulation in a manner that subverts the very purpose of the 1996 Act.^{77/}

Further, forbearance does not prevent the Commission from addressing important policy objectives that are in the public interest. As SBC and numerous commenters in the Commission’s rulemaking proceeding agree,^{78/} the Commission has ancillary authority under Title I and non-carrier-specific authority under Title II to implement essential policy goals, even if it properly forbears from applying Title II common carrier regulation in this context.^{79/} As a result, the Commission retains all necessary tools for protecting the public interest even if it properly forbears from applying Title II common carrier regulations to IP-enabled services.

^{76/} *Id.* § 230(b)(2).

^{77/} *See* Preamble to the Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (stating that the purpose of the Telecommunications Act of 1996 is to “reduce regulation in order to . . . encourage the rapid deployment of new telecommunications technologies”).

^{78/} *See, e.g.,* MCI Comments at 34-35; NCTA Comments at 24; BellSouth Comments at 29; Qwest Comments at 37-38; Cox Comments at 23.

^{79/} *See* SBC IP-Enabled Services NPRM Opening Comments at 48-57; SBC IP-Enabled Services NPRM Reply Comments at 29-34.

CONCLUSION

For these reasons, in addition to those stated in SBC's petitions for forbearance and for a declaratory ruling and its opening and reply comments in the Commission's *IP-Enabled Services NPRM*, the Commission should forbear from applying Title II common carrier regulation to IP-enabled services.

Respectfully submitted,

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July 14, 2004

CERTIFICATE OF SERVICE

I do hereby certify that I have caused the foregoing Reply Comments of SBC Communications Inc. to be filed with the FCC, via its Electronic Comment Filing System, in WC Docket 04-29 this 14th day of July, 2004.

/s/ John Meehan

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providers, application providers, and others — compete to offer subscribers the newest innovations for the delivery of enhanced voice, data, and video services.^{3/}

In considering how to classify IP-enabled services and whether and how to regulate them, the Commission must be mindful that the success of this industry to date has been enabled by the Commission's long-standing "unregulatory" approach. Further, the Commission should remember that it is addressing a robust, functioning market — not one in need of being "fixed" by the government. Reflexively regulating this next generation of technology and services, which is poised to revolutionize the nation's communications marketplace, is not remotely necessary. Indeed, such regulation would affirmatively impede innovation, competition, and economic growth. Thus, as the Commission itself has recognized, it should "rely[] wherever possible on competition and apply[] discrete regulatory requirements only where such requirements are necessary to fulfill important policy objectives."^{4/} As SBC has explained in its pending petitions,^{5/} and as it discusses further in these comments, the Commission can achieve that result by exercising its jurisdiction to classify IP-enabled services as interstate information services and preempting all common carrier and similar state regulation of such services. After making this foundational determination, the Commission can exercise its Title II non-carrier-

^{3/} See generally *Competition in the Provision of Voice Over IP and Other IP-Enabled Services, IP-Enabled Services*, WC Docket No. 04-36, at 2-11 (filed May 28, 2004) ("VoIP Fact Report").

^{4/} *NPRM* ¶ 5; see also *infra* Background.

^{5/} See *Petition of SBC Communications Inc. for a Declaratory Ruling Regarding IP Platform Services*, WC Docket No. 04-36 (filed Feb. 5, 2004) ("SBC Declaratory Ruling Petition"); *Petition of SBC Communications Inc. for Forbearance from the Application of Title II Common Carrier Regulation to IP Platform Services*, WC Docket No. 04-29 (filed Feb. 5, 2004) ("SBC Forbearance Petition").

specific jurisdiction and its Title I ancillary jurisdiction to design narrowly tailored rules addressing specific public policy concerns implicated by these services.^{6/}

For the reasons set forth in SBC’s pending petitions concerning IP platform services, while such an approach is demanded as a matter of public interest, it also is required as a matter of law. From a jurisdictional perspective, IP-enabled services almost always use, include, or provide access to the Internet — and more specifically, the globally dispersed networks and facilities that compose the Internet. They therefore are categorically interstate communications and fall squarely within the Commission’s express Title I jurisdiction over such communications. Moreover, separating out an intrastate component of IP-enabled services would be commercially infeasible. Within the course of a single communication, packets travel with geographic unpredictability. And, because of the inherent portability of such services, only the end user may know whether a transmission is intrastate or interstate. Consistent with the Commission’s

^{6/} As discussed below in section IV, the Commission has jurisdiction to regulate the activities of communications providers under Title II and the other substantive titles of the Act. While much of Title II gives the Commission authority to regulate the economic behavior of “common carriers” as such (*e.g.*, the rates, terms, and conditions for the telecommunications services they provide), some overarching provisions of Title II grant the Commission jurisdiction to regulate services or functions regardless of whether the provider is a common carrier. For example, section 254(d) gives the Commission permissive authority to require universal service contributions from providers of interstate telecommunications. 47 U.S.C. § 254(d). Similarly, section 251(e) gives the Commission exclusive jurisdiction over the North American Numbering Plan. *Id.* § 251(e). SBC uses the term “Title II non-carrier-specific jurisdiction” to refer generally to these and other provisions of the Act that authorize the Commission to regulate *non-common carrier* services and activities. In addition, as discussed below in Section IV, the Commission has jurisdiction under Title I of the Act to regulate “communication by wire or radio,” so long as the exercise of that jurisdiction is “reasonably ancillary to the effective performance of the Commission’s various responsibilities.” *United States v. Southwestern Cable Co.*, 392 U.S. 157, 178 (1968). Accordingly, SBC refers to this grant of authority as the Commission’s “ancillary jurisdiction.”

historic practice, which it recently reaffirmed,^{7/} these circumstances permit the Commission to assert exclusive jurisdiction over IP-enabled services.

Just as the Commission's jurisdiction follows from the nature of IP-enabled services, so too does the proper regulatory treatment of such services. As explained in SBC's pending petitions, IP-enabled services — when properly defined to exclude services that merely use the IP backbone for transport — intrinsically offer subscribers the enhanced functionality available using the Internet, including the capability for manipulating and storing information. They accordingly are correctly viewed as “information services,” which the Commission has recognized are properly regulated under Title I. This determination will free IP-enabled services from legacy common carrier regulation and will thus promote Congress's vision of a “vibrant and competitive free market” for “the Internet and other interactive computer services.”^{8/} A finding that IP-enabled services are interstate information services will also resolve emerging uncertainty concerning the regulatory classification of IP-enabled services and provide the predicate for the Commission's consideration of several of the public policy issues addressed below. In those limited instances where the current version of a particular IP-enabled service might not fall squarely into the information service category, the Commission should forbear from Title II common carrier regulation in order to promote the technological innovation and competition that has helped the market for these services thrive and has brought social and economic benefits to American consumers and businesses.

^{7/} See Memorandum Opinion and Order, *Petition for Declaratory Ruling that pulver.com's Free World Dialup is Neither Telecommunications Nor a Telecommunications Service*, 19 FCC Rcd 3307, 3320-21 ¶ 20 (2004) (“*Pulver Declaratory Ruling*”).

^{8/} 47 U.S.C. § 230(b)(2).

It is not enough, however, for the Commission merely to clarify that *it* will not subject IP-enabled services to legacy common carrier regulations designed in a different world for fundamentally different services. To ensure that government regulation does not distort or chill innovation and competition for IP-enabled services, the Commission should make clear that state-level common carrier regulation and certain other regulations would impose undue costs on providers of IP-enabled services and are thus inconsistent with Congress's free-market vision. The Commission is plainly authorized to preempt such regulations, and there is no room here for dual federal-state jurisdiction. Congress specifically charged the Commission with promoting a market for Internet-based services that is "unfettered by Federal or *State* regulation."^{9/} And for good reason: Congress understood that regulatory uncertainty is inimical to innovation and investment and that this concern would be greatly magnified if the Internet industry were exposed to regulation by 51 state public service commissions rather than a unitary federal policymaker. The Commission would undermine this unregulatory legacy if it now permitted the states to impose common carrier-type obligations or other requirements on IP-enabled service providers that would negate the federal policy of unregulation. As more and more states have begun to initiate proceedings to determine how to *regulate* VoIP and other IP-enabled services, it becomes increasingly critical for the Commission to take swift and clear action by assuming exclusive jurisdiction in this arena and expressly confirming its authority to preempt state common carrier regulation in particular and inconsistent state regulation in general.

In finding that IP-enabled services are Title I interstate information services that are presumptively exempt from Title II legacy common carrier regulation, the Commission would not relinquish authority to address various policy concerns relating to those services; in fact, a

^{9/} *Id.* (emphasis added).

determination that IP-enabled services are interstate information services is an essential predicate to the Commission's resolution of some of these issues. The Commission could address each of these concerns through its Title II non-carrier-specific jurisdiction, its Title I ancillary jurisdiction, and, in situations where IP-enabled services interact with the legacy circuit-switched telephone network (generally known as the public switched telephone network, or "PSTN"), its Title II jurisdiction over common carrier services. For example, the Commission can (and should) invoke its authority under Title II over access to the PSTN to establish appropriate intercarrier compensation rules when VoIP providers allow their subscribers to send and receive traffic to and from the PSTN. In addition, the Commission can rely on its Title II non-carrier-specific authority to address such issues as numbering, universal service, 911, and access for disabled persons.^{10/} And to the extent the Commission lacks authority under Title II to address any critical issues, it can rely on its ancillary authority under Title I.^{11/} Finally, declaring IP-enabled services to be (largely) unregulated information services under Title I would still leave undisturbed the Commission's Title II authority over legacy non-IP facilities and services used for PSTN-based telecommunications. The Commission not only can, but should, invoke these sources of authority to provide prompt solutions for the most urgent issues. In other cases, it would be sufficient for the Commission to declare its jurisdiction to oversee and monitor the IP-

^{10/} See, e.g., *id.* §§ 251(e)(1), 254(d), 251(e)(3), 255. Another fundamental issue raised by the advent of IP-enabled services is communications assistance for law enforcement. The Commission has wisely chosen to deal with that important issue in a separate proceeding devoted to addressing the unique needs of law enforcement, and SBC looks forward to participating in that proceeding. See U.S. Department of Justice, Federal Bureau of Investigation, and Drug Enforcement Administration, Joint Petition for Rulemaking to Resolve Various Outstanding Issues Concerning the Implementation of the Communications Assistance for Law Enforcement Act, Docket No. RM-10865 (filed Mar. 10, 2004); see also *NPRM* ¶ 50 n.158.

^{11/} 47 U.S.C. §§ 151, 152(a), 154(i).

enabled services market to determine whether a need for regulation exists, and to design regulatory solutions only when necessary.

While many of the issues that the Commission has raised in the *NPRM* are important, two key issues — in addition to the threshold issue of the proper regulatory classification of IP-enabled services as interstate information services — require immediate attention above all others: intercarrier compensation and access to numbering resources. First, the Commission should promptly resolve the current uncertainty regarding the intercarrier compensation obligations of IP-enabled service providers. In the long run, SBC expects that such uncertainty will be overtaken by creation of a unified intercarrier compensation regime. In the shorter term, however, the Commission should address the most pressing intercarrier compensation concern, which is access charge arbitrage. Access charges continue to play an important role in keeping telephone service affordable for tens of millions of residential and business customers. The Commission should clearly reaffirm that, under its *current* rules, IP-enabled service providers are not exempt from the obligation to pay access charges when they make use of the PSTN for purposes other than connecting with their *own* subscribers for the use of their own services. The Commission should also conclude that, going forward (and subject to the qualifications described herein), the applicable charges are interstate access rates, rather than intrastate access charges (or reciprocal compensation). Such a determination comports with the uniformly interstate nature of IP-enabled services, and also provides a stable and workable means of clarifying providers' obligations in this area pending the adoption of a unified scheme for intercarrier compensation generally.

The Commission should also immediately correct the distortion in its existing numbering rules that limits VoIP providers to certain network architectures in order to obtain numbering

resources from the North American Numbering Plan Administrator (“NANPA”) or the Pooling Administrator (“PA”). The current numbering rules have the practical effect of forcing VoIP providers to obtain numbers from ILECs or CLECs, thereby discouraging providers from directly interconnecting with tandem switches on par with other providers that have direct access to numbering resources. These rules are unnecessarily restrictive and inhibit the growth of VoIP services. VoIP providers that can satisfy basic criteria to demonstrate that they will use, rather than hoard, numbers should be entitled to direct access to NANP numbers, without the need to go through a LEC intermediary. And, while the Commission should monitor and address any numbering exhaust concerns presented by VoIP, such concerns would not be exacerbated by the type of direct access proposed by SBC, as discussed below in section VI.B.

Prompt resolution of these two issues, in addition to confirming the proper classification of IP-enabled services as interstate information services, is critical. Until these issues are satisfactorily resolved, investment and innovation in the market for IP-enabled services will be severely impeded. Thus, rather than attempting to address every issue raised in the *NPRM* simultaneously in a single omnibus order, SBC strongly encourages the Commission to act on at least these three issues as expeditiously as possible, but by no later than the end of the year.

Of course, the paramount importance of these issues in no way diminishes the critical need for the Commission to address the remaining public policy issues described below. For example, the Commission should assert jurisdiction to ensure that voice-capable IP-enabled services that interconnect with the PSTN can provide 911 access to emergency services. The industry is already voluntarily expending significant effort to develop the means for implementing 911 capability in an IP environment. Thus, the Commission should work closely with the industry to establish workable standards that can be implemented to ensure that

customers who use VoIP services, for example, will have similar 911 capabilities as end users on the PSTN. But the Commission should not adopt restrictive regulations because, in the long run, if the industry is afforded a flexible regulatory environment, the 911 capabilities of IP-enabled technology are likely to exceed current 911 capabilities.

The Commission should also reaffirm its commitment to the needs of people with disabilities by asserting its ancillary authority to ensure that IP-enabled services that interconnect with the PSTN provide the same types of access that Congress has required for telecommunications services and some information services, telecommunications equipment, and customer premises equipment. The IP revolution is a critical event in the development of the communications marketplace, and it would be wrong to deprive people with disabilities of the ability to realize the phenomenal potential of this transformative new medium. The Commission should continue its current course of extending, where appropriate, telecommunications relay services (“TRS”) funding for IP-enabled services that facilitate communications access for persons with disabilities. The Commission should also require IP-enabled service providers that interconnect with the PSTN to contribute to the federal TRS funding mechanism.

In addition, the Commission should reform its universal service policies to accommodate the explosive growth of IP-enabled services. The Commission has recognized that those who use and benefit from the PSTN, like IP-enabled service providers who interconnect with that network, should contribute to its support. In addition, as traffic migrates to IP-enabled services, the traditional telecommunications revenue base for universal service contributions will decrease and the contribution burden on legacy service providers will increase. The Commission should affirm its ability to broaden the contribution base to include IP-enabled service providers, and revisit this issue as necessary to ensure adequate and equitable universal service funding. The

Commission should also affirm its ability to authorize the use of universal service funding to support certain IP-enabled services where appropriate, at some later date in the future (though it should not act on that authority at present).

Finally, although the Commission has *authority* to employ its Title I ancillary jurisdiction to adopt consumer protection rules for all interstate communications services,^{12/} exercising it with respect to IP-enabled services would be redundant in light of existing protections. To the extent consumer protection issues arise in the market for IP-enabled services, they can be effectively dealt with through the normal application of non-communications-specific consumer protection laws, such as those addressing fraud. In addition, the thriving competition that already prevails in the IP marketplace, rather than regulation, is the best form of consumer protection. Thus, the Commission need not create special consumer regulations for IP-enabled services or import the consumer protection regulations that Congress tailored for customers of legacy services on the PSTN, such as the section 222 customer proprietary network information (“CPNI”) rules, which have never been deemed necessary for IP-enabled services. Finally, although the Commission should not impose the full suite of section 214 entry and exit rules on IP-enabled service providers, the Commission may want to consider requiring IP-enabled service providers to give at least some limited advance notice before they discontinue service to their customers.

In sum, by declaring that IP-enabled services are not subject to Title II common carrier regulation, the Commission can protect important policy goals, preclude the encroachment of

^{12/} See, e.g., Order on Reconsideration, *Promotion of Competitive Networks in Local Telecommunications Markets*, 32 Communications Reg. (P&F) 118 ¶¶ 7-8 (2004); Order, *2000 Biennial Review — Review of Policies and Rules Concerning Unauthorized Changes of Consumers’ Long Distance Carriers*, CC Docket No. 00-257 ¶ 9 (rel. May 4, 2004).

common carrier regulation into the IP sphere, maintain the nonregulated status quo for IP-enabled services, and accommodate with regulatory certainty the evolution of IP network technology, services, and applications.

BACKGROUND

In this proceeding, the Commission has undertaken the task of analyzing and categorizing IP-enabled services to determine their appropriate regulatory treatment. This requires the Commission to consider not only the technology underlying these services, but also how that technology has shaped the market for IP-enabled services. As explained below, the unique characteristics of IP technology have yielded a wide array of services and facilities that differ dramatically from those associated with the traditional circuit-switched network, a consequence that has direct bearing on how IP-enabled services should be regulated. While such services come in many shapes and forms, one fundamental point unites all of them: IP-enabled services exist in a highly competitive environment that promotes investment and innovation and protects the interests of consumers without any need for governmental intervention, except in very limited circumstances.^{13/} Indeed, the Commission recognized long ago that regulation could only harm these types of services as they began to emerge, and thus set an unregulatory course that made the IP revolution possible. As the Commission notes in the *NPRM*, IP-enabled services “have arisen in an environment largely free of government regulation, and the great majority, we expect, should remain unregulated.”^{14/} Congress shared this goal, and accordingly provided the Commission with the requisite authority to ensure the continuing success of IP-enabled services.

^{13/} The state of competition in the provision of IP-enabled services is described in detail in the VoIP Fact Report filed with the Commission on May 28, 2004.

^{14/} *NPRM* ¶ 35.

As the Commission recognizes at the outset of the *NPRM*, the technology underlying IP-enabled services is fundamentally different from that on which the traditional circuit-switched network is based.^{15/} The latter was originally designed for a single application: voice telephony. In fact, the very nature of circuit switching substantially limits its ability to support other types of services. Because a circuit-switched network dedicates a fixed amount of capacity (the circuit) for the duration of the communication regardless of whether information is being transmitted, it is normally an inefficient medium for the transmission of bursty data traffic. Moreover, the bandwidth of a circuit-switched transmission is typically quite narrow, which precludes its use for large quantities of information that must be sent simultaneously and continuously in real-time, such as video.

IP-based networks are free of these technical limitations, and in fact are capable of supporting a constantly expanding range of service possibilities.^{16/} The networks over which IP-enabled services are provided are specifically designed to handle huge quantities of information at high speeds and to transmit myriad communications of all types. The IP platform (in short, IP-based networks and their associated capabilities and functionalities) utilizes packet switching, in which all information — including voice, data, and video — is broken down into individual packets, each representing a portion of the message sent. Each packet is labeled with information that helps it arrive at its final destination — such as its originating and terminating endpoints and the number of packets that constitute the particular message. The packets then travel over different routes to their ultimate destination, where they are reassembled. The

^{15/} See, e.g., *id.* ¶ 4.

^{16/} See VoIP Fact Report at 23-24 (“The IP platform is widely viewed as much more flexible than the circuit-switched platform, because it enables new features to be developed and deployed much more quickly and efficiently.”).

emergence of the Internet Protocol — a common, open code that serves as the universal language of the Internet — has maximized these benefits of packetization by allowing communications to travel seamlessly across national and, more importantly, technological borders. The result is a platform that can support a far wider and more diverse range of services than is available over the circuit-switched network^{17/}:

- *First*, the universality of IP permits unprecedented interconnectivity among otherwise dispersed networks.
- *Second*, IP permits convergence of services that have traditionally been carried on different networks. Voice, data, and video can be unified by the language of IP, enabling them to be consolidated on a single network and transmitted simultaneously, with the packets commingled until they arrive at their respective destinations. Multiple applications can thus be offered concurrently and on a tightly integrated basis.
- *Third*, packetization, together with the continually improving labeling functions of packet networks, permits calls to be transported more efficiently. The network can distribute the individual packets making up a particular message across different paths, and can route them dynamically in ways that avoid problems in the network.
- *Finally*, the flexibility inherent in the IP platform gives end users unprecedented control over the services they receive. Customers can interact with stored data on a provider's network to customize their services to accommodate business, network, personal abilities, or other needs, integrating multiple applications as desired and according to their specific bandwidth and capacity requirements, in ways that are simply not possible over the circuit-switched network.^{18/}

The technology underlying the IP platform also has created market-based incentives to invest in and exploit these service possibilities. The IP platform is an overlay network, consisting of its own routers and IP-enabled facilities, that is separate and discrete from the

^{17/} See *id.* at 18 & tbl.5 (“[A]s industry analysts, competitive carriers, and equipment vendors now uniformly agree, VoIP provides comparable or superior quality and functionality to conventional circuit-switched service.”); see also *id.* at 34 tbl.6 (comparing features of VoIP and PSTN-based services).

^{18/} See *id.* at 24 (“Analysts expect an even wider array of features to be introduced in the future, as VoIP services become more integrated with data and video.”).

circuit-switched network and traditional Asynchronous Transfer Mode (“ATM”) and frame relay networks. In contrast to the circuit-switched network, the Internet is highly “modular,” in that particular providers can and do specialize in supplying services for different market segments, enabling *any* entity — including carriers, equipment manufacturers, software companies, and other “non-carriers” — to provide IP-enabled services, often over the networks of others.

As a result of this open architecture and independence from traditional legacy networks, the market for IP-enabled services is characterized by low barriers to entry and an absence of market power. For example, any entity that seeks to offer an IP-enabled service — such as VoIP — need only invest in relatively inexpensive call-management network equipment and certain customer premises equipment (“CPE”), which allow it to reach the continually growing number of consumers with a preexisting broadband connection.^{19/} As a result, diverse entities such as cable operators, traditional CLECs, interexchange carriers, and a new breed of IP-based providers — some of which own only the most minimal facilities — are now deploying IP-enabled services throughout the country.^{20/} Cable operators in particular have been aggressive in developing and deploying VoIP services.^{21/} For example, Comcast Corporation recently

^{19/} *Id.* at 11-13 (“The principal incremental equipment-related capital cost of adding VoIP service for a customer who already has a broadband connection is for relatively inexpensive CPE and call-management network equipment.”).

^{20/} *See generally id.* at 2-11 & tbl.1 (describing the types of providers that currently or plan to offer VoIP services); *see id.* at 25 (“A number of other IP-enabled services promise to exert competitive pressure on traditional networks and services. New video-over-IP services could provide much-needed competition to cable companies. IP-based services are also being successfully marketed to enterprise customers as substitutes for earlier generations of packet-switched services.”).

^{21/} *Id.* at 5 (“Since the beginning of 2004, each of the six major cable operators — whose networks reach 85 percent of U.S. households and serve 90 percent of all cable modem subscribers — has either begun commercial deployment of IP telephony service, or has announced plans to do so imminently. Many smaller cable operators have done so as well.”)

announced plans for a national rollout of VoIP that will enable it to provide phone service to all 40 million of its cable customers by the end of 2006.^{22/} These new services frequently cost less and provide greater functionality than traditional circuit-switched services.^{23/}

The success of IP-enabled services is no accident. Rather, it is the ultimate validation of the Commission's decision over twenty years ago to refrain from subjecting "enhanced services" to common carrier regulation under Title II. The Commission then recognized that introducing regulation into an emerging yet competitive market was unnecessary and, in fact, affirmatively harmful. As the Commission then explained, "[T]he absence of traditional public utility regulation of enhanced services offers the greatest potential for efficient utilization and full exploitation of the interstate telecommunications network."^{24/} The Commission subsequently maintained this policy of regulatory restraint, noting that "[r]egulation often can distort the workings of the market by imposing costs on market participants which they otherwise would

(citations omitted); *id.* at tbl.1 (listing the cable operators that do or plan to offer VoIP and the status of that deployment).

^{22/} Peter Grant, "Comcast Pushes Into Phone Service," *Wall St. J.*, at A3 (May 26, 2004); *see also* VoIP Fact Report at 6 (describing the plans of Comcast and other cable operators to offer VoIP services).

^{23/} *See* VoIP Fact Report at 14 (noting that "VoIP providers are now offering service at considerable discounts from circuit-switched service"); *see generally id.* at 11-20 (detailing the prices and service options available over various VoIP offerings as compared to those available over the PSTN).

^{24/} Final Decision, *Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry)*, 77 F.C.C.2d 384, 387 ¶ 7 (1980) ("*Computer IP*"); *see also id.* at 431-32 ¶ 123 (stating that subjecting enhanced services "to a common carrier scheme of regulation . . . would negate the dynamics of . . . this area").

not have to bear. . . . [T]he advent and growth of competition in a particular market eliminates the need for continued regulation.”^{25/}

Since that time, the Commission has repeatedly noted that it can “encourage investment and innovation by reducing regulatory obligations.”^{26/} In fact, the Commission has recognized that competition is generally superior to regulation as a means of promoting innovation and investment while protecting consumers:

Competitive markets are superior mechanisms for protecting consumers by ensuring that goods and services are provided to consumers in the most efficient manner possible and at prices that reflect the cost of production. Accordingly, where competition develops, it should be relied upon as much as possible to protect consumers and the public interest. In addition, using a market-based approach should minimize the potential that regulation will create and maintain distortions in the investment decisions of competitors as they enter local telecommunications markets.^{27/}

Government intervention is particularly undesirable with respect to the market for IP-enabled services, which is not only highly competitive but extremely dynamic. The Commission recognized the inappropriateness of regulating this highly dynamic market when it refrained from regulating the Internet backbone. As the Commission observed, “The technology and market conditions relating to the Internet backbone are unusually fluid and fast-moving, and we are reluctant to impose any regulatory mandate that relies on the persistence of a particular

^{25/} Report and Order, *Procedures for Implementing the Detariffing of Customer Premises Equipment and Enhanced Services (Second Computer Inquiry)*, 95 F.C.C.2d 1276, 1301 ¶ 38 (1983).

^{26/} Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, 18 FCC Rcd 16978, 16999-17000 ¶ 22 (2003) (“*Triennial Review Order*”), vacated in part, *United States Telecom Ass’n v. FCC*, 359 F.3d 554 (D.C. Cir. 2004) (quoting Third Report and Order and Fourth Further Notice of Proposed Rulemaking, *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, 15 FCC Rcd 3696, 3705 (1999)).

^{27/} First Report and Order, *Access Charge Reform*, 12 FCC Rcd 15982, 16094-95 ¶ 263 (1997) (“*1997 Access Charge Reform Order*”).

market model or market structure in this area.”^{28/} Regulation is incapable of keeping up with the rapid pace of transformative change that the Internet has brought to electronic communications generally.

In short, any attempt to impose regulation in this area would inevitably lag behind the newest developments and technological applications. That regulatory drag would discourage the innovation and new investment essential to the Internet’s growth. As Commissioner Abernathy has cautioned:

[I]t is important that we also act as technology facilitators — that is — we must recognize and reduce regulatory barriers to entry for emerging technologies through the adoption of policies that tap the benefits of emerging technologies. . . . [W]e should enact rules that allow free market forces to decide whether a particular technology succeeds or fails. In this manner, the market will dictate the success of technologies, not regulators.^{29/}

The Commission’s overarching challenge now is to preserve the favorable market conditions it has already created for IP-enabled services while ensuring that important public policy objectives are not forgotten in the wake of technological progress. It need not look far for the essential tools required to achieve this goal; Congress has already provided them in the Telecommunications Act of 1996. Congress formalized the Commission’s long-standing policy of regulatory restraint, finding that “[t]he Internet and other interactive computer services have flourished, to the benefit of all Americans, with a minimum of government regulation.”^{30/} To preserve and promote this success, Congress formally declared that it “is the policy of the United States” to “preserve the vibrant and competitive free market that presently exists for the Internet

^{28/} Report to Congress, *Federal-State Joint Board on Universal Service*, 13 FCC Rcd 11501, 11535-36 ¶ 72 (1998) (“*Report to Congress*”).

^{29/} FCC Commissioner Kathleen Q. Abernathy, “The Importance of the Market,” 3G Americas Board Briefing (June 3, 2003).

^{30/} 47 U.S.C. § 230(a)(4).

and other interactive computer services, unfettered by Federal or State regulation.”^{31/} Congress further ensured that this unregulatory umbrella would have wide reach by defining the Internet broadly and inclusively, in a manner that must be understood to include IP-enabled services.^{32/}

At the same time that it affirmatively declared a policy of unregulation for these services, Congress specified certain key goals and functions in Title II for the Commission to undertake without limitation to the “common carrier” status of a service provider (*e.g.*, universal service and administration of numbering resources). Congress also authorized the Commission to forbear in the public interest from applying any regulation that is not necessary to ensure that services are offered on just, reasonable, and nondiscriminatory terms and conditions or to protect consumers.^{33/} In fact, Congress reinforced this authority elsewhere in the 1996 Act: consistent with the Act’s overall purpose to “reduce regulation in order to . . . encourage the rapid deployment of new telecommunications technologies,”^{34/} Congress directed the Commission to “encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans” using “regulatory forbearance” and “other regulating methods that remove barriers to infrastructure investment.”^{35/} And finally, Congress preserved the

^{31/} *Id.* § 230(b)(2) (emphasis added).

^{32/} *See id.* § 231(e)(3) (“The term ‘Internet’ means the combination of computer facilities and electromagnetic transmission media, and related equipment and software, comprising the interconnected worldwide network of computer networks that employ the Transmission Control Protocol/Internet Protocol or any successor protocol to transmit information.”); *id.* § 230(f)(1) (defining the Internet as “the international computer network of both Federal and non-Federal interoperable packet switched data networks”); *id.* § 230(f)(2) (defining interactive computer service to include “any information service, system, or access software provider . . . including specifically a service or system that provides access to the Internet . . .”).

^{33/} *See id.* § 160(a).

^{34/} Preamble to the Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56.

^{35/} 47 U.S.C. § 157(a) notes.

Commission’s longstanding “elastic powers” under Title I of the Communications Act to manage “dynamic new developments in the field of communications,”^{36/} of which IP-enabled services are a prime example.

The Commission’s and Congress’s foresight in securing an unregulated space for the Internet and information services generally has permitted IP-enabled services to emerge in a robust fashion as the communications mode of the future, and the Commission should not depart from this approach. While it is true, as the Commission observes, that “the changes wrought by the rise of IP-enabled communications promise to be revolutionary,”^{37/} there is no need for revolutionary change in the unregulatory framework applicable to these services. The Commission already has noted the importance of maintaining a policy of regulatory restraint in this area, and Congress has given it the necessary statutory tools to ensure that the transition from traditional communications services to IP-enabled services will not endanger important public policy concerns. The Commission should use those tools wisely to reaffirm a comprehensive, unregulatory regime for IP-enabled services.

DISCUSSION

The Commission seeks comment on a wide variety of topics relevant to the overall regulatory treatment of IP-enabled services. In the discussion that follows, SBC proposes a comprehensive framework for considering those issues. In Section I, SBC proposes a refined definition for the class of “IP-enabled services” and associated facilities that should be subject to a regime of continued unregulation. In Section II, SBC discusses the Commission’s sweeping jurisdiction to maintain that regime. In Section III, SBC explains why IP-enabled services

^{36/} *Computer & Communications Indus. Ass’n v. FCC*, 693 F.2d 198, 213 (D.C. Cir. 1982) (quoting *General Tel. Co. of the Southwest v. United States*, 449 F.2d 846, 853 (5th Cir. 1971)).

^{37/} *NPRM* ¶ 5.

should be classified as Title I information services and why the Commission should cover all bases by forbearing from any otherwise applicable Title II common carrier regulation. In Section IV, SBC describes the sources of the Commission’s authority to craft the narrowly tailored regulatory obligations that may be necessary to meet any *non*-common carrier policy objectives implicated by IP-enabled services, and in Section V, SBC explains how IP-enabled services should be categorized so that any such regulatory obligations can be applied only to those services that raise relevant policy concerns. Finally, in Section VI, SBC identifies the discrete policy concerns that require the Commission’s attention, and describes the proper regulatory solution for each. The most urgent among these, SBC explains, are intercarrier compensation and access to numbering resources, and the Commission should resolve them in the near term. Next, as SBC shows, the Commission should consider issues concerning 911, disability access, universal service, and consumer protection.

I. THE COMMISSION SHOULD DEFINE IP-ENABLED SERVICES AS THOSE THAT ENABLE END USERS TO SEND OR RECEIVE COMMUNICATIONS IN IP FORMAT OVER AN IP PLATFORM.

The Commission identifies its subject in this proceeding as “IP-enabled services,” which it tentatively defines as “services and applications relying on the Internet Protocol family.”^{38/} Recognizing the “broad scope” of this standard, the Commission then seeks comment on how it might “more rigorously distinguish those specific classes of IP-enabled services, if any, on which we should focus our attention.”^{39/}

As explained in SBC’s pending petition for a declaratory ruling, the Commission should adhere to three key principles in defining the family of services falling within its IP-related

^{38/} *Id.* ¶ 1 n.1.

^{39/} *Id.*

unregulatory regime.^{40/} First, it should adopt a broad and inclusive definition that encompasses the full range of services — be they voice, data, video, or any other form — that ride the IP platform, thereby providing a meaningful opportunity for innovation and growth in this market. Second, in order to ensure regulatory certainty, the Commission should articulate bright-line boundaries in stating its definition of IP-enabled services so that this definition can be easily understood by providers and consumers of such services while avoiding reliance on fine technical distinctions that could become obsolete as technologies evolve. Finally, the Commission should adopt an approach that is competitively neutral among all providers (telephone companies, cable companies, wireless companies, satellite companies, and others), so that no provider will experience any special regulatory advantages or disadvantages by virtue of the historic regulatory classification of the non-IP-enabled legacy services it offers. Stated another way, providers of IP-enabled services should not be forced to carry their legacy regulatory baggage into the new competitive market for IP-enabled services.

Consistent with these principles, the Commission should refine its definition of the class of unregulated “IP-enabled services” to consist of (a) IP networks and their associated capabilities and functionalities (*i.e.*, an IP platform), and (b) IP services and applications provided over an IP platform that enable an end user to send or receive a communication in IP format.^{41/} Under this definition, the touchstone for identifying an IP-enabled service (and distinguishing the service from a traditional legacy service) is that it reaches or leaves the end

^{40/} See generally SBC Declaratory Ruling Petition at 25-28.

^{41/} SBC’s petitions refer to such services as “IP platform services.” While SBC believes that this term better describes the scope of services and facilities that should fall within the Commission’s deregulatory umbrella, SBC uses the Commission’s term, “IP-enabled services,” throughout these comments to avoid confusion.

user in IP format.^{42/} This focus on the functionality afforded the end user is consistent with the Commission’s repeated recognition that the regulatory treatment of a particular service turns on the nature of the service as delivered to the end user.^{43/} It is only where a service is either sent to or received by an end user in IP format — and not when an end user merely receives a communication in circuit-switched format — that the end user can tap into the enormous functional capabilities of the IP platform. The Commission’s definition should account for this defining feature of IP-enabled services.

Importantly, under the definition proposed above, an offering would not lose its status as an IP-enabled service simply because it interfaces at some point with the PSTN. Indeed, as long as the subscriber can send and receive communications in IP format, *that subscriber* is receiving an IP-enabled service. While, as SBC discusses below, such interconnection with the PSTN may implicate particular policy concerns, the overall regulatory classification of the service at issue should not hinge on those concerns because the Commission retains the authority to craft specific regulations as necessary to address them.

SBC’s proposed definition is expansive in that it encompasses IP networks themselves and the services and applications provided over them. Addressing IP-based networks is crucial to creating a rational, unregulatory framework. The quality and range of IP-based services are

^{42/} To be clear, by “reaching or leaving the end user in IP format,” SBC means the end user’s premises. Thus, for example, if an end user originates an IP communication on CPE on its premises, and converts that communication to circuit-switched format before it crosses the demarcation to a service provider’s network, the communication would not qualify as an IP-enabled service. In other words, the communication between the end user and the service provider must be in IP format.

^{43/} See, e.g., *Report to Congress* at 11530 ¶ 59 (“[I]f the user can receive nothing more than pure transmission, the service is a telecommunications service. If the user can receive enhanced functionality, such as manipulation of information and interaction with stored data, the service is an information service.”); see also 47 U.S.C. § 153(20) (defining an information service based on what “capability” is “offer[ed]”).

directly linked to the capabilities of their underlying platforms, such that regulation of the platforms would necessarily affect the myriad products, services, and applications provided over them.^{44/} Furthermore, the future development of IP-based communications depends on innovation at *both* the service and facility levels. In addition, the definition proposed above is sufficiently broad to cover both networks and services, including all types of communications — voice, data, video, or anything else — so long as they are sent to or received by an end user in IP format over an IP platform. This inclusiveness reflects the fact that, as noted above, IP platforms are capable of supporting all forms of communications by reducing them to packets that can be commingled and transported over a range of facilities.

The definition described above also benefits from having bright-line boundaries to ensure predictability and certainty. The central aspect of this approach is an emphasis on the ability to send or receive communications in IP format over an IP platform, a distinction that is apparent to, and thus understood by, both providers and consumers of these services. Providers will instantly know what uses of IP will or will not entitle them to the unregulatory umbrella applicable to IP-enabled services, while consumers will likewise know, by virtue of the functionality they receive, how a service will be categorized.

Finally, this approach is competitively neutral, in that it applies to IP-to-the-end-user offerings provided by *any* type of communications provider — including telephone companies, cable companies, wireless providers, satellite companies, and any other type of entity regardless of whether it is a “carrier” with respect to its legacy non-IP services. Similarly, it applies to any type of facility — such as copper, coaxial cable, fiber, spectrum, powerline and any other medium used as part of the IP platform. This is important given the openness and modularity of

^{44/} See SBC Declaratory Ruling Petition at 29.

the IP platform, which, as noted above, presents end users with varied choices between (i) obtaining particular components (*e.g.*, software, customer premises equipment (“CPE”), broadband services) from individual providers and managing their own networks, or (ii) purchasing wholly or partially assembled IP platform services from one or more service providers. Consistent regulatory treatment of all such components and providers will ensure that the choices between these options are driven by marketplace forces, not artificial regulatory distinctions.

The definition of “IP-enabled services” used in the *NPRM* — “services and applications relying on the Internet Protocol family” — is broader than that described above, and as a result, is somewhat overinclusive. As the Commission recently recognized, it is important not to confuse genuine IP platform services with services, such as AT&T’s PSTN-IP-PSTN voice service, that rely on IP technology only “in the middle” without offering customers the enhanced functionality associated with IP platforms. In the Commission’s own words, this is not “the kind of use of the ‘Internet or interactive services’ that Congress sought to single out for exceptional treatment.”^{45/} At the same time, the Commission’s definition fails to include IP-specific *facilities*, such as routers, over which IP-enabled services are provided and to which they are inextricably linked.^{46/} This underinclusiveness could render any regulatory solutions the Commission adopts in this proceeding incomplete.

In short, the Commission should rule that any service that reaches or leaves a customer in IP format over an IP platform will fall under the unregulatory umbrella the Commission

^{45/} Order, *Petition for Declaratory Ruling that AT&T’s Phone-to-Phone IP Telephony Services are Exempt from Access Charges*, WC Docket No. 02-361, FCC 04-97 ¶ 17 (rel. Apr. 21, 2004) (“*AT&T Access Charge Order*”).

^{46/} See SBC Declaratory Ruling Petition at 29.

establishes in this proceeding, as should the underlying IP-specific facilities.^{47/} This definition is sufficiently versatile to accommodate future services that cannot yet be anticipated. As such, it is a more preferable approach to defining these services than that reflected in the categories recognized by the Commission in the 1998 *Report to Congress* — specifically, phone-to-phone, computer-to-phone, and computer-to-computer, which the Commission tentatively used to categorize different VoIP services.^{48/} These categories are considerably outdated, because the evolution of the CPE used with IP-enabled services increasingly blurs any meaningful distinction between “telephones,” “computers,” and various other devices (such as the IP adapters offered by some VoIP providers) that can be used to provide such services. Moreover, by their reliance on “phones,” the categories described in the *Report to Congress* are inherently voice-centric and largely ignore video, data, and other IP-enabled services. Rather than building regulatory distinctions on the tenuous differences in the CPE used for voice communications, the Commission should employ a more holistic approach that focuses on the functional attributes of IP-services, as SBC proposes above.

II. IP-ENABLED SERVICES ARE INHERENTLY AND INDIVISIBLY INTERSTATE COMMUNICATIONS SUBJECT TO THE COMMISSION’S JURISDICTION.

The Commission seeks guidance on “the appropriate basis or bases for asserting federal jurisdiction over the various categories of IP-enabled services”^{49/} and the extent to which “IP-enabled service[s] should be deemed subject to *exclusive* federal jurisdiction with regard to

^{47/} See *supra* note 42.

^{48/} See *NPRM* ¶ 44 (asking comment on whether the Commission should revisit any regulatory interpretations, including those set forth in the *Report to Congress*).

^{49/} *Id.* ¶ 40.

traditional common carrier regulation.”^{50/} The answer to this question is straightforward. The Commission has clear jurisdiction over all “interstate communications,” and such communications undoubtedly include IP-enabled services. The inherently interstate nature of these services derives from the nationally and internationally dispersed networks over which they are provided. These services are also *indivisibly* interstate because their portable nature and the inherent geographic indeterminacy of IP transmissions make it infeasible to segregate any intrastate component of these services for regulatory purposes. As such, IP-enabled services fall categorically within the Commission’s exclusive jurisdiction.

A. IP-Enabled Services Are Overwhelmingly Interstate in Nature.

The Communications Act gives the Commission broad jurisdiction over “all interstate and foreign communication by wire or radio.”^{51/} The Act defines “communication by wire” as “the transmission of writing, signs, signals, pictures, and sounds of all kinds by aid of wire, cable, or other like connection between the points of origin and reception of such transmission, including all instrumentalities, facilities, apparatus, and services . . . incidental to such transmission,”^{52/} and “communication by radio” as “the transmission by radio of writing, signs, signals, pictures, and sounds of all kinds, including all instrumentalities, facilities, apparatus, and services . . . incidental to such transmission.”^{53/} IP-enabled services, as explained above, are communications by wire or radio, and the IP platform over which IP-enabled services are transmitted is clearly an instrumentality, facility, or apparatus required for such transmission.

^{50/} *Id.* ¶ 41.

^{51/} 47 U.S.C. § 152(a).

^{52/} *Id.* § 153(52).

^{53/} *Id.* § 153(33).

IP-enabled services are also inherently interstate. This is true for the same reasons the Commission has always deemed Internet-based services to be interstate in nature.^{54/} Internet-based services necessarily involve interstate communications because of the dispersed nature of the Internet itself.^{55/} Internet communications “interact[] with a global network of interconnected computers,”^{56/} and thus “involve computers in multiple locations, often across state and national boundaries.”^{57/} The Commission relied on precisely these aspects of Internet-based services when it asserted jurisdiction in 1998 over DSL services,^{58/} and in 1999 and 2001 over dial-up services offered by ISPs,^{59/} both of which necessarily involve a fundamental interstate component.

Likewise, IP-enabled services rely on the same dispersed networks that constitute the Internet, and the key enabling equipment that provides the stored information and the processing capabilities with which subscribers interact (such as web and feature servers) will in most cases

^{54/} See, e.g., Order on Remand and Report and Order, *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996; Intercarrier Compensation for ISP-Bound Traffic*, 16 FCC Rcd 9151, 9176 ¶ 54 (2001) (“*ISP Remand Order*”) (noting that the Commission “ha[s] always held [ISP-bound traffic] to be predominantly interstate for jurisdictional purposes), *cert. denied sub nom. Core Communications, Inc. v. FCC*, 123 S. Ct. 1927 (2003); *id.* at 9177-78 ¶ 55 (“[T]he Commission has been consistent in its jurisdictional treatment of ISP-bound traffic.”).

^{55/} See, e.g., *id.* at 9178 ¶ 58; Memorandum Opinion and Order, *GTE Telephone Operating Cos.*, 13 FCC Rcd 22466, 22468 ¶ 5 (1998) (“*GTE Order*”) (describing the Internet as “an international network of interconnected computers enabling millions of people to communicate with one another and to access vast amounts of information from around the world”); Declaratory Ruling and Notice of Proposed Rulemaking, *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities*, 17 FCC Rcd 4798, 4799 ¶ 1 n.1 (2002) (“*Cable Modem Order*”) (defining “the Internet” as a “global information system”), *rev’d on other grounds sub nom. Brand X Internet Servs. v. FCC*, 345 F.3d 1120 (9th Cir. 2003) (“*Brand X*”).

^{56/} *ISP Remand Order* at 9178 ¶ 58.

^{57/} *Id.* at 9178 ¶ 58 n.115.

^{58/} *GTE Order* at 22483 ¶ 33.

^{59/} See, e.g., *ISP Remand Order* at 9176 ¶ 54.

be located outside the state in which a particular user is located. For example, the transmission, storage, and processing associated with an IP-enabled service is likely to involve servers, gateways, and other equipment located within and outside of the state in which the user of the IP-enabled service is located. And some IP-enabled services, such as SBC's Hosted IP Communications Service ("HIPCS"), allow an end user to make a VoIP call while simultaneously pursuing other tasks that likewise entail interstate communications, such as accessing the Internet and obtaining calendars, contact lists, and other information stored on a distant database.^{60/} Moreover, with an IP-enabled service, like other Internet-based services, a "user may, for example, access websites that reside on servers in various state[s] or foreign countries, communicate directly with another Internet user, or chat on-line with a group of Internet users located in the same local exchange or in another country, and may do so either sequentially or simultaneously."^{61/} Thus, when end users use an IP-enabled service to communicate with each other, the interstate nature of the service is engaged no matter where the end users are physically located.^{62/}

^{60/} See http://www02.sbc.com/Products_Services/Business/ProdInfo_1/1,,1358--1-1-0,00.html (last visited May 26, 2004).

^{61/} *GTE Order* at 22478-79 ¶ 22 (footnote omitted). For example, "[O]n a sports page, only the format of the webpage may be stored at the host computer in Chicago. The advertisement may come from a computer in California (and it may be a different advertisement each time the page is requested), the sports scores may come from a computer in New York City, and a part of the webpage that measures Internet traffic and records the user's visit may involve a computer in Virginia. If the user decides to buy something from this webpage, say a sports jersey, the user clicks on the purchase page and may be transferred to a secure web server in Maryland for the transaction." *ISP Remand Order* at 9178 ¶ 58.

^{62/} *Cf. GTE Order* at 22479 ¶ 23 ("'mixed-use' special access lines (*i.e.*, lines carrying both intrastate and interstate traffic) are subject to the Commission's jurisdiction where it is not possible to separate the uses of the special access lines by jurisdiction") (citing *Decision and Order, MTS and WATS Market Structure Amendment of Part 36 of the Commission's Rules and Establishment of a Joint Board*, 4 FCC Rcd 5660, 5660-61 ¶ 7 (1989)).

That IP-enabled services are interstate communications is further underscored by their inherent portability: end users may use them wherever they have access to a broadband connection. For example, with SBC's HIPCS product, end users will be able to take their laptops to any location while "virtually" remaining in their home office. And VoIP permits telephone calls to be placed with the same geographical indifference: depending on the particular service, a user can plug his phone into any broadband connection anywhere in the country, and the call will appear to be placed from the user's chosen area code. Indeed, in the *Pulver Declaratory Ruling*, the Commission found that the FWD service is an interstate service based in part on the fact that a user's "physical location can continually change."^{63/} Thus, even where an IP-enabled service may have an "intrastate" component, the service itself is properly deemed interstate because the overwhelming majority of communications will be interstate, thus placing the service within the Commission's jurisdiction.

B. IP-Enabled Services Are Indivisibly Interstate Because It Is Infeasible to Segregate Any Intrastate Component.

IP-enabled services are also *indivisibly* interstate because, even when they can be said to have interstate and intrastate components, differentiating between both those components is completely impractical if not impossible.^{64/} The Commission,^{65/} courts,^{66/} and carriers^{67/} have

^{63/} *Pulver Declaratory Ruling* at 3320 ¶ 20.

^{64/} Although the Commission described this principle in the *Pulver Declaratory Ruling* as the "mixed use" doctrine, *see id.* at 3321-22 ¶ 22, the Commission has generally referred to it as the "inseverability doctrine" when applied to services and "mixed use" only when applied to facilities. *Compare, e.g., GTE Order* at 22481 ¶ 28 ("Under the inseverability doctrine, preemption of state regulation is permissible 'where it is not possible to separate the interstate and the intrastate components of the asserted FCC regulation.'") (quoting *Louisiana Pub. Serv. Comm'n v. FCC*, 476 U.S. 355, 375 n.4 (1986)), with *GTE Order* at 22479 ¶ 23 (explaining that the "mixed-use facilities rule" originated with respect to special access lines for which interstate and intrastate usage could not be separated). Whichever term is used, the principle remains the

long recognized that, when the interstate and intrastate components of a service are inseverable, the Commission has jurisdiction over the complete service, including any intrastate component.^{68/}

A single IP-enabled service often involves simultaneous interaction with a dispersed network of end users, websites, and databases located in various states or countries. This obscures any distinction between the interstate and intrastate components of an IP-enabled service. Additionally, the nature of IP technology itself renders any attempt to isolate an intrastate component of such services impractical. As described above, IP technology translates

same: exclusive Commission jurisdiction prevails when it is impossible or impractical to separate the interstate and intrastate components of the traffic or facility at issue.

^{65/} See, e.g., First Report and Order and Further Notice of Proposed Rulemaking, *Promotion of Competitive Networks in Local Telecommunications Markets*, 15 FCC Rcd 22983, 23031-32 ¶ 107 (2000) (“Because fixed wireless antennas are used in interstate and foreign communications and their use in such communications is inseverable from their intrastate use, regulation of such antennas that is reasonably necessary to advance the purposes of the Act falls within the Commission’s authority.”) (footnote omitted).

^{66/} See, e.g., *Louisiana Pub. Serv. Comm’n*, 476 U.S. at 375 n.4 (addressing the Commission’s jurisdiction “where it was not possible to separate the interstate and intrastate components of the asserted FCC regulation”); *Southwestern Bell Tel. Co. v. FCC*, 153 F.3d 523, 543 (8th Cir. 1998) (observing that “the services provided by ISPs may involve both an intrastate and an interstate component and it may be impractical if not impossible to separate the two elements”); *Illinois Bell Tel. Co. v. FCC*, 833 F.2d 104 (D.C. Cir. 1989); *California v. FCC*, 905 F.2d 1217 (9th Cir. 1990); *Public Util. Comm’n of Tex. v. FCC*, 886 F.2d 1325 (D.C. Cir. 1989); *North Carolina Utils. Comm’n v. FCC*, 552 F.2d 1036 (4th Cir. 1977); *North Carolina Utils. Comm’n v. FCC*, 537 F.2d 787 (4th Cir. 1976).

^{67/} AT&T Corp. Petition for Declaratory Ruling, *AT&T Corp. Petition for Declaratory Ruling Regarding Enhanced Prepaid Calling Card Services*, WC Docket No. 03-133, at 13 (filed May 15, 2003) (“AT&T Calling Card Petition”) (“The Commission has never attempted separately to identify and regulate each of the constituent ‘calls,’ or ‘communications,’ in th[e] context of Internet traffic]. Rather, the Commission has simply deemed the entire session jurisdictionally interstate.”) (citations omitted).

^{68/} To the extent a state may be deemed to have concurrent jurisdiction with the Commission over the intrastate component of such a service, the Commission should preempt any regulation that is inconsistent with federal policy, as discussed further *infra* section III.C.

all forms of communications into packets, permitting these packets to be flexibly and efficiently routed to their destinations. As convergence continues, a data stream may at any given time include packets (consisting of voice, data, video, or some combination thereof) bound for points both within and outside of a particular state. However, there is no commercially feasible way for carriers to track, on a bit-by-bit basis, the exact routes of those packets. This is because the routing of IP-based communications is based on matching a numeric IP address to a particular device — such as an end user’s computer or IP phone, a router, or a server, to name a few — rather than an immovable geographic destination. The resulting portability of IP-enabled services and devices — *i.e.*, the ability to access these services by plugging an IP device into any broadband connection — itself thwarts any effort to isolate an intrastate “component” of such services.

Given these inherent qualities of the Internet and IP technology, it is well-established that “the interstate and intrastate components [of such services] cannot be reliably separated”^{69/} and that they are thus categorically subject to the Commission’s jurisdiction.^{70/} The Commission reached the same conclusion with respect to FWD in the *Pulver Declaratory Ruling*, concluding that it had jurisdiction over that service because “it would be impractical to determine whether

^{69/} *ISP Remand Order* at 9175 ¶ 52 (citing *Southwestern Bell Tel. Co.*, 153 F.3d at 543).

^{70/} *Id.* (citations omitted). Although the D.C. Circuit has twice urged the Commission to consider more carefully whether, as a substantive matter, dial-up ISP-bound traffic is subject to the “reciprocal compensation” provision of section 251(b)(5), it has expressly affirmed the Commission’s long-standing *preemptive jurisdiction* over ISP services. *See Bell Atl. Tel. Cos. v. FCC*, 206 F.3d 1, 5 (D.C. Cir. 2000) (“[t]here is no dispute that the Commission has historically been justified” in treating dial-up Internet access as interstate); *see also WorldCom, Inc. v. FCC*, 288 F.3d 429 (D.C. Cir. 2002).

there was any intrastate component to FWD given the fact that FWD’s information service as provided to its members occurs solely within the confines of the Internet.”^{71/}

The difficulties in separating the interstate and intrastate components of IP-enabled services exist regardless of whether one end of that service touches the PSTN. While it may be easy enough to locate the PSTN end of such a communication, it is still commercially infeasible to identify the physical location at the IP end. Indeed, while a POTS subscriber may be located at a known geographic address, a VoIP subscriber, using the same VoIP device, can call that POTS subscriber from across the street, across the state, across the country, or across the world — without any practicable way to identify that VoIP subscriber’s location.^{72/} Thus, for the same basic reason that it would be infeasible to carve out an “intrastate” component of IP-enabled services that (like Pulver’s VoIP offering) always have *both* feet in an IP network, it would also be difficult to carve out an “intrastate” component of IP-enabled services that, like SBC’s HIPCS product or Vonage’s VoIP service, can interconnect with the PSTN and thus permit communications with *one* foot in an IP network.

Furthermore, forcing providers to develop a capability to identify those communications that are actually intrastate in an IP-enabled service would unnecessarily burden the future development of such services. As the Commission explained in its *Pulver Declaratory Ruling*, given the inherent geographic anonymity of the IP addressing schemes, “[a]ttempting to require [the provider] to locate its members for the purpose of adhering to a regulatory analysis that served [the legacy PSTN] would be forcing changes on this service for the sake of regulation

^{71/} *Pulver Declaratory Ruling* at 3320 ¶ 20.

^{72/} See, e.g., *Petition for Declaratory Ruling, Vonage Holdings Corp. Petition for Declaratory Ruling Concerning an Order of the Minnesota Public Utilities Commission*, WC Docket No. WC 03-211, at 28-29 (filed Sept. 22, 2003).

itself, rather than for any particular policy purpose. . . . [I]mposing this substantial burden would make little sense and would almost certainly be significant and negative for the development of new and innovative IP services and applications.”^{73/} In sum, IP-enabled services are properly deemed indivisibly interstate communications within the Commission’s jurisdiction.

III. IP-ENABLED SERVICES ARE TITLE I INFORMATION SERVICES AND DO NOT FALL WITHIN TITLE II.

The Commission seeks comment on “the proper legal classification and appropriate regulatory treatment” of each discrete category of IP-enabled services.”^{74/} As a first step toward ensuring an unregulated environment for IP-enabled services, the Commission should conclude that such services, as defined by SBC, are “information services,” and therefore subject to regulation under Title I, but outside the scope of Title II common carrier regulations and the other substantive Titles of the Act. In those limited instances in which a service does not appear to fall squarely within the information services category, the Commission should forbear from applying legacy Title II common carrier regulation or any other substantive Titles of the Act to that service. The Commission should likewise find that any state-level counterparts to such regulation will almost invariably frustrate important federal policy and will thus be preempted.

A. IP-Enabled Services Should Be Deemed Title I Information Services.

In light of their various capabilities described above, IP-enabled services that satisfy SBC’s proposed definition — that is, services that enable customers to send or receive communications in IP format^{75/} — are best characterized as “information services.” IP-enabled services utilize the Internet to provide an information and communications management tool — a

^{73/} *Pulver Declaratory Ruling* at 3320-21 ¶ 21, 3323 ¶ 24.

^{74/} *NPRM* ¶ 42.

^{75/} *See supra* note 42.

means of fusing computing power and communications. Use of an IP platform to provide a service that originates or terminates in IP, unlike use of the PSTN to originate and terminate telephone calls, directly offers “a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications,”^{76/} even if it also offers services resembling those regulated under other substantive Titles of the Act. IP-enabled services may allow end users to connect to the Internet (a functionality that the Commission has long deemed an information service), gain access to stored files (such as voicemail or directory information), protect their privacy through customized call screening, and route communications in a manner customized to the end user’s preferences. Many IP-enabled services also include a net protocol conversion that allows customers to interface with the PSTN — traditionally a hallmark of information services under the Commission’s precedent.^{77/} As the

^{76/} 47 U.S.C. § 153(20).

^{77/} See, e.g., *AT&T Access Charge Order* ¶ 4 & n.13 (“[G]enerally, services that result in a protocol conversion are enhanced services”); First Report and Order and Further Notice of Proposed Rulemaking, *Implementation of the Non-Accounting Safeguards of Sections 271 and 272 of the Communications Act of 1934, as Amended*, 11 FCC Rcd 21905, 21956 ¶ 104 (1996) (“*Non-Accounting Safeguards Order*”) (explaining that a protocol conversion “that enables an end-user to send information into a network in one protocol and have it exit the network in a different protocol clearly ‘transforms’ user information,” while “services that interpret and react to protocol information associated with the transmission of end-user content clearly ‘process’ such information”). As the Commission observed in the *AT&T Access Charge Order*, the service at issue there involved no *net* protocol conversion. See *AT&T Access Charge Order* ¶ 13. The occurrence of a net protocol conversion should not be considered an *essential* criterion for classification as an “information service,” even though it often is a *sufficient* condition. *NPRM* ¶ 44 (noting that the Commission’s definition of “enhanced services” includes services that “employ computer processing applications that act on the . . . protocol . . . of the subscriber’s transmitted information” and seeking comment on whether the Commission should “continue to accord this specific distinction dispositive weight when classifying services”) (quoting 47 C.F.R. § 64.702(a)). Some IP-enabled services, such as Pulver’s FWD service, may not involve any sort of protocol conversion because the communications they support are both sent and received in IP format. Yet these services are still considered information services. See *Pulver Declaratory Ruling* at 3313-14 ¶ 11.

Commission recently found, a service that offers such “computing capabilities” must be considered an information service.^{78/}

As IP-enabled services develop, it will become even more obvious that they are properly characterized as information services rather than telecommunications services. The IP-enabled services being introduced today allow customers to design and individualize many aspects of their communications directly from their desktop — a dramatic change from centrally controlled telecommunications networks. And these services are evolving toward even greater integration of voice, data, and video applications, allowing manipulation of data in ways that blend traditional categories and melt away old regulatory distinctions. The Commission should account for this inevitable evolution of IP-enabled services by declaring that they are inherently information services.

The alternative is to adopt a regressive “telecommunications service” classification for such services that would become obsolete upon its release. But the Commission should reject simplistic “quacks like a duck” arguments that claim VoIP services should be regulated because they bear some similarity to traditional telephone services. In reality, voice is just one of the countless applications that will be offered as part of IP-enabled services. VoIP is no more a traditional telephone service than email is a traditional mail service — it is a revolutionary and disruptive advancement that provides consumers with much greater capabilities. Investment and innovation in IP-enabled services would be stopped in its tracks if regulators were to dissect IP-enabled services and force them into outdated regulatory silos or even if they were to spend years debating the issue. The Commission is in a unique position to preserve an environment of regulatory restraint that has allowed IP-enabled services to develop in the first instance.

^{78/} *Pulver Declaratory Ruling* at 3313-14 ¶ 11.

Classifying IP-enabled services as information services would not preclude the Commission from exercising its Title II non-carrier-specific authority or its broad Title I authority to address specific public policy concerns, as discussed below. Nor would it have any effect on existing rights of access to legacy, non-IP-based services and certain of the facilities that support them. First, no matter what services an ILEC might provide over given facilities in its network, a CLEC would still be entitled to lease network elements to the extent the Commission has found such unbundling to be consistent with section 251(d)(2). For example, to the extent that the Commission retains unbundling obligations for the copper loop, those obligations would continue notwithstanding a determination that the ILEC's IP-enabled services offered over that loop fall outside the scope of Title II common carrier regulation. Furthermore, to the extent the Commission deems necessary, ILECs would remain subject to existing *Computer II* obligations for non-IP-enabled information services, thus ensuring unbundled access to legacy transmission services.

B. IP-Enabled Services Are Not Telecommunications Services Falling Within Title II of the Act.

The same dynamic capabilities that cause IP-enabled services to be classified as information services correspondingly *prevent* them from falling neatly within any of the Act's substantive Titles. The structure of the current Communications Act was established at a time when, for the most part, particular *services* were tightly linked to particular *facilities* and those facilities were owned by monopoly or near-monopoly providers. Those providers are subject to disparate regulatory regimes codified in the Act's service-specific Titles (telephone companies are subject to Title II, broadcasters to Title III, and cable companies to Title VI). IP technology obliterates those old regulatory assumptions.

IP technology supports a variety of end-user applications and services, whose functionalities mimic those of traditional communications services (such as voice and data) that carriers have long provided to end users over legacy networks specially designed for those services. The IP platform converts voice and data into packets and transmits them as part of a larger bitstream containing a variety of other applications. As a result, end users can use the Internet platform and its multiplicity of underlying networks for services and applications that look like (but in fact are not) “telecommunications services” regulated under Title II (for example, VoIP services that originate and/or terminate in IP format); “broadcast services” regulated under Title III (for example, streaming audio); and “cable services” regulated under Title VI (for example, switched IP video services). Because IP-enabled services encompass all of these functions, they transcend the traditional statutory categories and cannot be appropriately regulated under any of these substantive Titles.

The inherent capability of IP-enabled services to meld a multitude of integrated services traditionally offered by siloed industry segments is consistent with and reinforces the existing distinction between “information services” and “telecommunications services” as the Commission has historically interpreted those terms. The Commission should not fundamentally reinterpret those two terms, even if such reinterpretation could be consistent with the constraints of their statutory definitions.^{79/} The dichotomy between unregulated information (or “enhanced”) services and regulated telecommunications (or “basic”) services, while not always perfectly clear, has been a cornerstone of telecommunications policy since *Computer II*. Many

^{79/} See *NPRM* ¶ 44 (seeking comment on whether the Commission’s previous interpretations of the statutory classifications “are or are not suitable for proper classification of IP-enabled services”); see also *id.* ¶ 45 (stating that “the disparate regulatory treatment assigned to providers of ‘telecommunications services’ and ‘information services’ might well be inappropriate in the context of IP-enabled services”).

providers have structured their business plans specifically around the present understanding of the differences between those regulatory categories. Introducing radically new interpretations or applications of those terms now could dramatically alter the way in which existing products and services are designed, marketed, and regulated, potentially causing confusion for both consumers and providers while forcing providers to alter their business operations in light of the possible shift in regulatory obligations.

C. The Commission Should Forbear from Applying Title II Common Carrier Regulation to IP-Enabled Services To the Extent Such Services Do Not Fall Squarely Within the Category of Information Services.

To guard against the possibility that a given IP-enabled service, in its current form, may not appear to fall squarely into the information services category, the Commission should eliminate any doubt concerning the unregulated status of IP-enabled services by using its authority under section 10 of the Act to forbear from applying Title II common carrier regulation to these services (as well as Title III and Title VI regulation) to the extent such regulation might otherwise be found to apply. The Commission notes in the *NPRM* that “[u]se of this forbearance authority might be appropriate if the statutory classification accorded to a particular class of IP-enabled services leads to regulatory consequences that are neither necessary nor appropriate in the context of such services.”^{80/} In fact, subjecting any IP-enabled service to Title II common carrier regulation, even if it is found to fall within the statutory definition of a “telecommunications service,” would be both unnecessary and inimical to the development of such services generally.

For the reasons stated by SBC in its pending petition for forbearance regarding IP platform services, the Commission should thus forbear from Title II common carrier regulation at

^{80/} *Id.* ¶ 47.

the same time that it finds that all IP-enabled services are unregulated information services under Title I.^{81/} The Commission’s previous ruling on cable modem service provides a valuable lesson in this regard. There, after concluding that cable modem service is an “information service” outside the scope of Title II common carrier regulation, the Commission proceeded on its own motion to waive the application of *Computer II* requirements but only tentatively concluded that forbearance from applying *any* Title II common carrier regulation was appropriate.^{82/} After the Commission released its *Cable Modem Order*, the Ninth Circuit reversed its ruling on the classification issue (though it expressly preserved the Commission’s power to forbear from Title II regulation despite finding that cable modem service contains a “telecommunications service” component).^{83/} But because the Commission had only *tentatively* concluded that forbearance was appropriate, the unregulated status of cable modem service remains in doubt.

^{81/} See generally SBC Forbearance Petition at 2-12. Although portions of that petition refer to forbearance from Title II regulation generally, that language was intended as shorthand for common carrier regulation under Title II, as other portions of the petition make clear. See, e.g., *id.* at 4 (stating that the forbearance criteria under section 10 of the Communications Act apply “to require forbearance from Title II common carrier regulation of IP platform services”). SBC’s request for forbearance is thus limited to common carrier regulation under Title II, and does not encompass requirements falling within the Commission’s Title II non-carrier-specific authority, as defined *supra*.

^{82/} See *Cable Modem Order* at 4825-26 ¶ 45, 4847 ¶ 94. As the Commission explained:

Given that cable modem service will be treated as an information service in most of the country, we tentatively conclude that the public interest would be served by the uniform national policy that would result from the exercise of forbearance to the extent cable modem service is classified as a telecommunications service. We also believe that forbearance would be in the public interest because cable modem service is still in its early stages; supply and demand are still evolving; and several rival networks providing residential high-speed Internet access are still developing.

Id. at 4847-48 ¶ 95.

^{83/} *Brand X*, 345 F.3d at 1132 n.14.

The Commission need not be tentative in the use of its forbearance authority here; it should forbear from the application of Title II common carrier regulation to IP-enabled services. The Commission must ensure competitive neutrality in this area by adopting congruent rules for intermodal providers of competing services.^{84/} For that reason alone, if the Commission responds to the *Brand X* decision by forbearing from the application of Title II obligations to cable modem service, it will be legally obligated to forbear to the same extent from the application of such regulations to any IP-enabled service that might be characterized as a telecommunications service under the Ninth Circuit’s reasoning.^{85/}

Indeed, the Act requires forbearance here even apart from the need to ensure consistency with the Commission’s cable modem policies in the wake of the *Brand X* decision. Section 10 provides that the Commission “shall forbear” from applying regulations that are (1) “not necessary to ensure that . . . charges, practices, classifications, or regulations . . . are just and reasonable and are not unjustly or unreasonably discriminatory” and (2) “not necessary for the protection of consumers,” and where (3) forbearance would be in “the public interest.”^{86/} In assessing the third of these criteria, the Act specifically requires the Commission to consider whether forbearance “will promote competitive market conditions.”^{87/} As discussed in more detail in SBC’s forbearance petition, each of these criteria is met here.

^{84/} See generally *United States Telecom Ass’n v. FCC*, 359 F.3d 554, 578-90 (D.C. Cir. 2004) (“*USTA II*”).

^{85/} See *Brand X*, 345 F.3d at 1129 (“[U]nlike other ISPs, [a cable modem provider] controls all of the transmission facilities between its subscribers and the Internet. . . . [T]o the extent that [a cable operator] provides its subscribers Internet transmission over its cable broadband facility, it is providing a telecom service.”) (quoting *AT&T Corp. v. City of Portland*, 216 F.3d 871, 877-78 (9th Cir. 2000)).

^{86/} 47 U.S.C. § 160(a).

^{87/} *Id.* § 160(b).

First, Title II common carrier regulation is not necessary to ensure that IP platform services will be offered in a just, reasonable, and nondiscriminatory manner.^{88/} As noted above, the market for IP-enabled services is already highly competitive and operates pursuant to cooperative business arrangements. Thus, market forces will continue to ensure that rates will be kept at reasonable levels and that providers' practices — with respect to consumers and to each other — will remain reasonable and nondiscriminatory.

Second, Title II common carrier regulation is not necessary to protect consumers.^{89/} Consumers already have benefited greatly from the hands-off approach that has made the Internet's exponential growth possible.^{90/} In fact, not only would regulation fail to afford consumers any additional protections, but it would in fact harm them by providing disincentives to continued innovation and thus limit the range of IP-enabled services that are available. And, as discussed below, forbearance will neither disturb the enforcement of generally applicable consumer protections nor preclude the development of additional requirements specifically tailored to address certain public policy objectives. In particular, the Commission has authority

^{88/} *Id.* § 160(a)(1); *see also* SBC Forbearance Petition at 11.

^{89/} 47 U.S.C. § 160(a)(2); *see also* SBC Forbearance Petition at 10-11.

^{90/} The Commission has recognized that competition is more effective than regulation for protecting consumers:

Competitive markets are superior mechanisms for protecting consumers by ensuring that goods and services are provided to consumers in the most efficient manner possible and at prices that reflect the cost of production. Accordingly, where competition develops, it should be relied upon as much as possible to protect consumers and the public interest.

1997 Access Charge Reform Order at 16094-95 ¶ 263.

to implement essential policy goals related to consumer protection without any need to classify IP-enabled services as telecommunications services.^{91/}

Finally, forbearance is needed to serve the public interest.^{92/} Title II common carrier regulation would selectively impose costs on certain providers of IP-enabled services, discouraging new entrants from offering such services while driving existing providers to tailor services based on regulatory requirements rather than consumer needs. This result would be contrary to the Commission's undeniable public interest obligation under section 706 of the 1996 Act to "encourage the deployment on a reasonable and timely basis of advanced telecommunications capability" through "regulatory forbearance" and "other regulating methods that remove barriers to infrastructure investment."^{93/} In order to promote these goals, the Commission should reinforce its conclusion that IP-enabled services are information services by granting SBC's petition for forbearance. Doing so will not disrupt the Commission's authority to address the various public policy objectives discussed below.

^{91/} See *infra* section VI.F (discussing the application of consumer protection laws to IP-enabled services).

^{92/} 47 U.S.C. § 160(a)(3); see also SBC Forbearance Petition at 5-10.

^{93/} 47 U.S.C. § 157(a) note; see also *id.* § 230(b)(2). Although the Commission has not viewed section 706 as an *independent* source of forbearance authority, it has emphasized that the mandate of section 706 to promote broadband investment through "regulatory forbearance" weighs heavily in favor of forbearing under section 10 from unnecessary regulation of advanced services. See Memorandum Opinion and Order and Notice of Proposed Rulemaking, *Deployment of Wireline Services Offering Advanced Telecommunications Capability*, 13 FCC Rcd 24011, 24044-45 ¶ 69 (1998) ("[S]ection 706(a) directs the Commission to use the authority granted in other provisions, including the forbearance authority under section 10(a), to encourage the deployment of advanced services.").

D. The Commission Should Preempt State Regulations of IP-Enabled Services That Negate Clear Federal Policies.

For the same reasons that forbearance from any otherwise applicable Title II common carrier regulation is appropriate for all IP-enabled services, the Commission should affirmatively preempt any state-level counterparts to such regulation as irreconcilable with federal policy in this area, and should likewise make clear that any other state regulations that undermine the congressionally mandated policy of unregulation will be preempted. If (as it should) the Commission determines that IP-enabled services are interstate information services as a categorical matter, a state cannot then rule that any intrastate component of such services should be subject to common carrier or other state regulation. While the Commission must accommodate valid state interests that are *consistent* with federal policy,^{94/} it is specifically empowered to preempt those state regulations that would “negate valid FCC regulatory goals” with respect to the interstate portion of a communication.^{95/}

The Commission should determine that its preemptive power extends both to any state-level regulation that corresponds to Title II “common carrier” regulation — *i.e.*, regulations of the rates, terms, and conditions for providing service — and to any other type of state regulation that will burden the provision of IP-enabled services and interfere with Congress’s vision of an IP-enabled services market unfettered by regulation. For example, a state 911- or E-911-related regulation, which might not strictly be categorized as a regulation of the terms of service, could in some cases conflict with federal policy in this area. Accordingly, the Commission should not

^{94/} See *California v. FCC*, 39 F.3d 919, 932 (9th Cir. 1994) (“*California III*”).

^{95/} *Id.* at 931; see also *NARUC v. FCC*, 880 F.2d 442, 429 (D.C. Cir. 1989) (stating that “the *only* limit that the Supreme Court has recognized on a state’s authority over intrastate telephone service occurs when the state’s exercise of that authority negates the exercise by the FCC of its own lawful authority over interstate communication”); *GTE Order* at 22481 ¶ 28; *Pulver Declaratory Ruling* at 3320 ¶ 20.

limit any description of its preemptive power to state regulation that resembles Title II common carrier regulation, and it should further clarify that such preemption applies across the board to protect *all* providers of IP-enabled services from regulation. This is not to say *every* state regulation of any type would necessarily be subject to preemption. A generally applicable state consumer protection requirement may not conflict with the Commission’s unregulatory approach, and thus would not be presumptively preempted. But the Commission should make clear that its broad unregulatory approach leaves little room for state regulation of IP-enabled services as a general matter, and that most regulations targeted at IP-enabled services, or carried over to such services from the common carrier/public utility regulatory regime, are presumptively preempted.

Preemption is entirely appropriate. As an initial matter, a prerequisite for state regulation is that the service in question is either purely “intrastate” or has severable “interstate” and “intrastate” components that are amenable to separate federal and state regulatory regimes. As discussed above, however, IP-enabled services are primarily interstate and, as a practical matter, do *not* contain a severable intrastate component.^{96/} Indeed, requiring providers of IP-enabled services to develop the capability to isolate such a component solely to facilitate the imposition of state regulation would “negat[e] federal objectives for the interstate component” by imposing costly and unreasonable burdens that would ultimately impede the development of these services.^{97/} As the Commission explained in its *Pulver Declaratory Ruling*, “In a dynamic market such as the market for Internet applications like FWD, we find that imposing this

^{96/} See *California III*, 39 F.3d at 931-33; *GTE Order* at 22481 ¶ 28; *Pulver Declaratory Ruling* at 3320 ¶ 20 (stating that a service is subject to exclusive federal jurisdiction if it is not “practically and economically possible to separate [its] interstate and intrastate components . . . without negating federal objectives for the interstate component”).

^{97/} *Pulver Declaratory Ruling* at 3320 ¶ 20.

substantial burden would make little sense and would almost certainly be significant and negative for the development of new and innovative IP services and applications.”^{98/} The same is true for all IP-enabled services. Indeed, imposing this burden would undermine the Commission’s authority with respect to IP-enabled services. As AT&T explained in another proceeding:

With the proliferation of broadband networks and enhanced services — including the Internet — the prevalence of services that combine enhanced communications and voice call routing will only increase. Attempts to assert intrastate jurisdiction over such services by focusing in isolation on one aspect of the service — the routing of the voice call — threatens to undermine the ability of the Commission to fulfill its statutory responsibility to regulate interstate communications.^{99/}

Furthermore, as a general matter, most state regulation of IP-enabled services is not only *unnecessary* in light of the highly competitive marketplace for IP-enabled services, but would affirmatively discourage innovation and investment by imposing burdensome costs on providers. That would thwart the clear federal policy embodied in the Act of promoting the development and deployment of this class of services without governmental intervention. The Commission affirmed this principle in asserting its authority to preempt state regulation of Pulver’s FWD service, noting that because that service “is an unregulated information service[,] . . . *state* regulations that seek to treat FWD as a telecommunications service or otherwise subject it to public-utility type regulation would almost certainly pose a conflict with [the federal] policy of nonregulation.”^{100/}

The Commission should confirm its authority and intention to preempt any such state regulation going forward. This is particularly important now, in light of emerging activity at the

^{98/} *Id.* at 3323 ¶ 24.

^{99/} AT&T Calling Card Petition at 13-14.

^{100/} *Pulver Declaratory Ruling* at 3316 ¶ 15 (emphasis added).

state level in this area. It is true, as the Commission has recognized, that “most states have not acted to produce an outright conflict between federal and state law that justifies Commission preemption[.]”^{101/} But at least 18 states have started to take positions on the regulatory classification and treatment of specific VoIP services or are actively contemplating whether to do so. To name just a few recent examples, the New York Public Service Commission just determined that Vonage must be regulated as a “telephone corporation” under state law by virtue of its VoIP offering.^{102/} And the California Public Utilities Commission tentatively found that VoIP is a public utility telecommunications service under state law and initiated an investigation into whether it should be regulated as such.^{103/} These *ad hoc* proceedings threaten future

^{101/} *Id.* at 3318-19 ¶ 18.

^{102/} See Order Establishing Balanced Regulatory Framework for Vonage Holdings Corp., *Complaint of Frontier Telephone of Rochester, Inc. Against Vonage Holdings Corporation Concerning Provision of Local Exchange and InterExchange Telephone Service in New York State in Violation of the Public Service Law*, Case No. 03-C-1285, at 9, 13 (N.Y. Pub. Serv. Comm’n May 21, 2004) (asserting state jurisdiction to regulate Vonage’s VoIP service and finding that, even if the Commission were ultimately to classify that service as an “information service,” the state could still regulate its intrastate aspects).

^{103/} See Order Instituting Investigation, *Order instituting investigation on the Commission’s own motion to determine the extent to which the public utility telephone service known as Voice over Internet Protocol should be exempted from regulatory requirements*, at 3 (Cal. Pub. Utils. Comm’n Feb. 11, 2004). During the past year, Minnesota and Wisconsin also took steps to subject providers of such services to regulations applicable to traditional telephone companies. See Order Finding Jurisdiction and Requiring Compliance, *Complaint of the Minnesota Department of Commerce Against Vonage Holding Corp. Regarding Lack of Authority to Operate in Minnesota*, Docket No. P-6214/C-03-108 (Minn. Pub. Utils. Comm’n Sept. 11, 2003); *Wisconsin Decides VoIP Getting Too Big to Ignore*, Broadband Business Report (Sept. 23, 2003) (noting that the Wisconsin commission, without a hearing, sent a letter to at least three providers of VoIP directing them to comply with state regulations applicable to telecommunications carriers). Other states — including Alabama, Illinois, Michigan, Missouri, North Carolina, North Dakota, Ohio, Oregon, Virginia, and Washington — are investigating whether to take similar action, either on their own initiative or at the request of a specific party. See Alan Breznick, *States Weigh Regulating VoIP As Traditional Phone Service*, Cable Datacom News (Oct. 1, 2003); Peter Lewis, *Rules for Internet telephony challenge regulators; Is it telecommunications or information services?*, Seattle Times, at C1 (Oct. 13, 2003) (describing recent proceedings initiated in Washington state and Oregon); Order Establishing Case, *Study of*

innovation and investment in IP-enabled services by raising the specter of 51 different schemes of common carrier regulation over a class of services that, until now, has always been understood to be unregulated. The Commission's longstanding guarantee of a regulation-free zone for the Internet has been an important stimulus for its explosive growth and transformative effects on the world economy. The Commission would threaten both that legacy and the enormous economic benefits of regulatory certainty if it suggested the potential for state common carrier regulation for IP-enabled services.

In sum, as in the *Pulver Declaratory Ruling*, the Commission should confirm that it “ha[s] the authority to act in this area if states promulgate regulations applicable to [an IP-enabled] service that are inconsistent with its current nonregulated status.”^{104/} While states may validly play a role in applying some forms of non-communications-specific regulation — for example, by exercising general authority under existing state consumer protection statutes — even that involvement should occur within a predominantly federal framework. The Commission should take the lead in setting the basic principles and rules, with the states' input.

Voice over Internet Protocol, Case No. TW-2004-0324, at 1, 3 (Mo. Pub. Serv. Comm'n Feb. 3, 2004) (opening case to further the state commission's knowledge of VoIP technology and to assist in its preparation of comments to be filed with the Commission); Gayle Kansagor, *VoIP Debate Moves to North Dakota*, Telecommunications Reports Daily (Dec. 8, 2003). Colorado, Pennsylvania, and Texas have suspended similar proceedings in light of the Commission's issuance of the *NPRM*. See Order Closing Docket, *Investigation Into Voice over Internet Protocol (VoIP) Services*, Docket No. 03M-220T, ¶ 3 (Colo. Pub. Utils. Comm'n Dec. 17, 2003); Motion of Commissioner Glen R. Thomas, *Investigation into Voice over Internet Protocol as a Jurisdictional Service*, Docket No. M-00031707, at 2 (Pa. Pub. Utils. Comm'n Apr. 15, 2004); Order Addressing Threshold Issues and Motion to Dismiss, *Arbitration of Non-Costing Issues for Successor Interconnection Agreements to the Texas 271 Agreement*, Docket No. 28821, at 7 (Tex. Pub. Utils. Comm'n Apr. 16, 2004).

^{104/} *Pulver Declaratory Ruling* at 3318-19 ¶ 18.

IV. CLASSIFYING IP-ENABLED SERVICES AS TITLE I INFORMATION SERVICES WOULD IN NO WAY DISTURB THE COMMISSION’S TITLE II NON-CARRIER-SPECIFIC AUTHORITY AND TITLE I ANCILLARY JURISDICTION TO ADDRESS IMPORTANT PUBLIC POLICY CONCERNS IMPLICATED BY SUCH SERVICES.

Despite the competitive nature of the market for IP-enabled services, the growing use of those services — especially as a next-generation replacement for existing legacy voice services — might still raise certain public policy concerns. For example, pressing concerns already have been raised concerning what compensation obligations providers of such services have when they use the PSTN to terminate or receive legacy telecommunications traffic and whether such providers have a right to use North American Numbering Plan (“NANP”) resources. And as these services proliferate, they are presenting public policy challenges, such as the availability of emergency services, disabilities access, and universal service.

As important as these issues are, they are not a reason for the Commission to refrain from determining that IP-enabled services are Title I information services and thus exempt from Title II legacy common carrier regulation. Such a determination would not prevent the Commission from addressing these and other similar issues, because the Commission would retain a broad range of authority to meet the regulatory challenges that will attend the continued growth of IP-enabled services. *First*, the Commission’s existing statutory authority over common carrier services will often suffice to address issues peculiar to the use of PSTN-based services in connection with IP-enabled services. *Second*, several provisions of Title II authorize the Commission to regulate non-common carrier services. The Commission may employ this so-called “Title II non-carrier-specific jurisdiction” to regulate many aspects of IP-enabled services regardless of how they are characterized. And *third*, the Commission may fill any remaining regulatory gaps with its Title I ancillary jurisdiction.

As discussed below, the Commission should actively exercise all such authority as necessary in the near term to craft appropriate rules to govern the intercarrier compensation obligations and numbering rules applicable to IP-enabled service providers. Other issues, like emergency services, may also merit the Commission's concern in the future. The Commission should clearly establish its jurisdiction in this arena, and its authority to implement rules if and as required. This is not to say, however, that the Commission should take action regarding these issues now. The Commission should be careful not to overregulate; where there is evidence that the industry already has begun to address public policy concerns, it may be sufficient for the Commission to monitor developments and support voluntary action.

A. The Commission's Existing Statutory Authority Over Common Carrier Services Is Sufficient to Reach Some Concerns Relating to IP-Enabled Services.

In some cases, the Commission's established statutory authority over common carrier services would plainly reach the most pressing issues that are raised by IP-enabled services, even once they are properly classified as information services. As a preliminary matter, for example, a finding that IP-enabled services are information services would leave undisturbed the Commission's Title II authority over underlying legacy common carrier facilities and services that are used today for PSTN-based telecommunications, even if those facilities and services can also be used for IP-enabled services. Preserving appropriate access to basic legacy facilities and services provides ample assurance that all providers will have an equal opportunity to offer facilities-based IP-enabled services, as they have had since the *Computer II* obligations were first put in place. The market for the IP-enabled technology that can be used in connection with the basic transmission services or facilities to which competitors would still have access is highly competitive.

The Commission's existing authority over common carriers also addresses other concerns that surround IP-enabled services, particularly the need to clarify the intercarrier compensation obligations that apply to IP-enabled services that send traffic to or receive traffic from the PSTN.^{105/} The Commission has express authority under sections 201 and 251(g) of the Act to address the rates that LECs may charge and that other entities are obligated to pay for access to the PSTN. And such authority extends to the obligations of *any* entity that accesses the PSTN to send or receive interstate traffic, regardless of whether that carrier is a common carrier. For example, as discussed below, there is no question that the Commission's Title II authority over access charges authorizes the Commission to address the access charge obligations of information service providers. Thus, the Commission's existing Title II authority over legacy common carrier access services provide the Commission with all the authority it requires to address the pressing intercarrier compensation question presented by IP-enabled services.

B. The Commission's Title II Non-Carrier-Specific Jurisdiction Is Sufficient to Address Many Regulatory Concerns with Respect to IP-Enabled Services.

Several provisions in Title II empower the Commission to regulate certain elements of communications service regardless of how the provider is classified. This Title II non-carrier-specific jurisdiction relates to *non-common carrier* issues — that is, those unrelated to the terms and conditions on which a provider offers service to the public. The Commission's jurisdiction under these statutory provisions is not limited to providers of telecommunications services. This authority will in many cases be sufficient for the Commission to address key issues relating to IP-enabled services, notwithstanding their regulatory classification.

^{105/} See *infra* section VI.A.

For example, the Commission has long-established, exclusive statutory authority under section 251(e) over numbering resources. The Communications Act does not limit the assignment of numbers to providers of telecommunications services. The Commission can exercise its powers to preclude or permit the use of numbers by *any* type of provider, regardless of the provider’s classification.^{106/} Indeed, section 251(e) contains no reference whatsoever to a carrier of any type, instead granting the Commission authority over the entity that the Commission creates or designates “to administer telecommunications numbering and to make such numbers available on an equitable basis.”^{107/} This authority therefore gives the Commission all the power it needs to address how IP-based service providers, for example, should obtain and use numbering resources.

The same is true of universal service. Section 254 of the Act provides on its face that the Commission’s express authority over universal service under section 254 is not limited to telecommunications service providers: “Any other provider of interstate telecommunications may be required to contribute to the preservation and advancement of universal service if the public interest so requires.”^{108/} Thus, the statute empowers the Commission to craft new contribution requirements and to assess at least some types of IP-enabled service providers for contributions; this will allow the Commission to respond to the challenge of traffic migrating from the PSTN to the IP platform.^{109/}

The Commission’s disability access authority under Title II likewise is not limited to common carriers. Specifically, section 255 requires that “manufacturer[s] of

^{106/} See *infra* section VI.B.

^{107/} 47 U.S.C. § 251(e)(1).

^{108/} *Id.* § 254(d).

^{109/} See *infra* section VI.E.

telecommunications equipment or customer premises equipment . . . ensure that the equipment is designed, developed, and fabricated to be accessible to and usable by individuals with disabilities.”^{110/} This, in fact, obligates the Commission to address disability access issues for the provision of the equipment underlying IP-enabled services, which obviously is not a common carrier activity.

C. The Commission Also Has Ancillary Jurisdiction to Address Any Relevant Policy Concerns That Are Not Entirely Within the Commission’s Title II Jurisdiction Over Non-Common Carrier Services and Activities.

Finally, the Commission has ancillary jurisdiction to fill in any gaps in its statutory authority and to address any remaining public policy issues raised by IP-enabled services, especially those that interconnect with the PSTN and are designed to replace, complement, or improve on legacy services. The Commission has broad authority to “perform any and all acts, make such rules and regulations, and issue such orders not inconsistent with [the] Act, as may be necessary in the execution of its functions.”^{111/} And as the courts and the Commission have long recognized, the Commission’s functions are not limited to those specified in the substantive Titles of the Act (II, III, and VI), but include the general duty under Title I of the Act to “make available, so far as possible . . . a rapid, efficient, Nationwide, and world-wide wire and radio communication service with adequate facilities at reasonable charges.”^{112/} The Commission thus has jurisdiction under the “general jurisdictional grant in Title I of the Communications Act” to adopt rules and regulations that are not clearly required under Titles II-VI, so long as the

^{110/} 47 U.S.C. § 255(b).

^{111/} *Id.* § 154(i).

^{112/} *Id.* § 151.

“assertion of jurisdiction is ‘reasonably ancillary to the effective performance of the Commission’s various responsibilities.’”^{113/}

The Commission has ancillary jurisdiction to address the public policy concerns surrounding the increasing deployment of IP-enabled services. First, the Commission has regularly found that information services are “communications by wire or radio” and thus “are subject to our jurisdiction under Title I of the Communications Act.”^{114/} As IP-enabled services and platforms proliferate and increasingly replace and draw traffic from legacy services and the PSTN, they will become a critical link in “Nationwide . . . communications,” and they also will have a direct effect on the quality and sustainability of the PSTN. The Commission’s ancillary jurisdiction will allow its regulations to keep pace with this change and ensure the Commission’s continuing ability to promote the policy goals of the Communications Act.^{115/}

Indeed, the Commission has a long history of using its ancillary authority to regulate new services that slip between the cracks of the Act’s substantive Titles yet compete with and replace

^{113/} Report and Order and Further Notice of Proposed Rulemaking, *Digital Broadcast Content Protection*, 18 FCC Rcd 23550, 23563 ¶ 29 (2003) (“*Digital Broadcast Content Order*”) (quoting *Southwestern Cable*, 392 U.S. at 178) (footnote omitted).

^{114/} See, e.g., Report and Order and Further Notice of Inquiry, *Implementation of Section 255 and 251(a)(2) of the Communications Act of 1934, as Enacted by the Telecommunications Act of 1996*, 16 FCC Rcd 6417, 6455-62 ¶¶ 93-108 (1999) (“*Disability Access Order*”) (using ancillary authority to regulate providers of voicemail and interactive menu services); *Computer & Communications Indus. Ass’n*, 693 F.2d 198 (upholding Commission’s assertion of ancillary jurisdiction over enhanced services); see also Memorandum Opinion and Order, *Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations by Time Warner Inc. and America Online, Inc., Transferors, to AOL Time Warner Inc., Transferee*, 16 FCC Rcd 6547, 6610 ¶ 148 (2001) (concluding that IM services are communications by wire and/or radio and thus that “new IM-based services . . . are subject to our jurisdiction under Title I of the Communications Act”); 47 U.S.C. § 152(a); *id.* § 151 (defining purpose of the Communications Act to “make available, so far as possible . . . a rapid, efficient, Nationwide, and world-wide wire and radio communication service with adequate facilities at reasonable charges”).

^{115/} See *Southwestern Cable*, 392 U.S. at 178; *United States v. Midwest Video Corp.*, 406 U.S. 649 (1972) (“*Midwest Video I*”).

existing services already regulated under one of those Titles. Over thirty years ago, the Commission exercised its general Title I authority to regulate the relatively new cable industry, even though the Act did not explicitly give the Commission authority to do so. In *United States v. Southwestern Cable Co.*, the Supreme Court affirmed this assertion of jurisdiction, holding that the Commission’s broad duty to develop a national system for local television broadcasting, coupled with its authority over “all interstate . . . communication by wire or radio,” permitted its regulation of cable systems.^{116/} The Court recognized that cable systems were increasingly used to import distant programming, rather than simply to extend the range of local antennae.^{117/} In other words, cable services would substitute for, rather than merely enhance, local programming, just as IP-enabled services now promise to replace and draw traffic from the PSTN. The Court found reasonable the Commission’s conclusion that cable programming could damage local stations, possibly to the point that the benefits of a local broadcasting system would be lost altogether.^{118/} The Commission similarly feared that by “dividing the available audiences and revenues,” cable service would exacerbate financial difficulties faced by UHF and educational television.^{119/} Based on these conclusions, the Court agreed that “the Commission cannot discharge its overall responsibilities without authority over this important aspect of television service.”^{120/}

^{116/} *Southwestern Cable*, 392 U.S. at 178.

^{117/} *Id.* at 163.

^{118/} *Id.* at 175.

^{119/} *Id.* at 176.

^{120/} *Id.* at 177 (quotation and citation omitted); see also *FCC v. Midwest Video Corp.*, 440 U.S. 689, 706-07 (1979) (“*Midwest Video IP*”) (“[In *Southwestern Cable*] regulation was imperative to prevent interference with the Commission’s work in the broadcasting area.”); *GTE Serv. Corp. v. FCC*, 474 F.2d 724, 734 (2d Cir. 1973) (“[In *Southwestern Cable*] the authority of the FCC . . . was based on the need to control the growth of community antenna systems in order

The Commission’s ancillary jurisdiction is also a recognized tool for the Commission to affirmatively promote the goals of the Act when confronted by new services that do not fall squarely within the Act’s existing provisions. The Supreme Court recognized this aspect of the Commission’s authority when it upheld further regulations of the cable industry in *United States v. Midwest Video Corporation*.^{121/} The Court “agree[d] with the Commission that its concern with CATV carriage of broadcast signals is not just a matter of avoidance of adverse effects, but extends also to requiring CATV affirmatively to further statutory policies.”^{122/} Indeed, there is no stopping point between promoting statutory policies and preventing adverse effects, for “the avoidance of adverse effects is itself the furtherance of statutory policies.”^{123/} Several years later, the Court reaffirmed this core holding.^{124/}

The courts have upheld the Commission’s exercise of its Title I authority in several additional contexts where regulation of new services that fall outside of one of the Act’s substantive Titles has been deemed a necessary component of the Commission’s oversight of

that the Commission might accomplish its broad responsibility of orderly development of an appropriate system of local television broadcasting.”).

^{121/} These regulations prohibited cable systems having 3,500 or more subscribers from carrying broadcast station signals unless they also operated as a local outlet by cablecasting and had facilities available for local production and presentation of programming. *See Midwest Video I*, 406 U.S. at 653.

^{122/} *Id.* at 664 (quotation omitted) (plurality opinion); *see also id.* at 667 (“In short, the regulatory authority asserted by the Commission in 1966 and generally sustained by this Court in *Southwestern* was authority to regulate CATV with a view not merely to protect but to promote the objectives for which the Commission has been assigned jurisdiction over broadcasting.”); *id.* at 675-76 (Burger, C.J., concurring in the judgment).

^{123/} *Id.*

^{124/} *Midwest Video II*, 440 U.S. at 700 (“Our holding in *Midwest Video* sustained the Commission’s authority to regulate cable television with a purpose affirmatively to promote goals pursued in the regulation of television broadcasting . . .”).

services or principles within those Titles.^{125/} As the courts have noted, “Congress sought ‘to endow the Commission with sufficiently elastic powers such that it could readily accommodate dynamic new developments in the field of communications.’”^{126/} Likewise, the Commission has repeatedly recognized its authority to use its ancillary jurisdiction to promote the goals served by the Communications Act.^{127/} And the Commission has specifically exercised those “elastic powers” to regulate information services where it has found that doing so is ancillary to its duty to advance the public interest in the provision of telecommunications services under Title II.^{128/}

By contrast, in the isolated circumstances in which courts have *invalidated* the Commission’s invocation of its Title I authority, they have done so primarily because the Commission had exercised that authority to adopt rules that were in significant *tension* with substantive principles embodied in the Communications Act or in the First Amendment.^{129/} But

^{125/} See, e.g., *Computer & Communications Indus. Ass’n*, 693 F.2d at 213 (upholding Commission’s conclusion that regulation of enhanced services was necessary to prevent AT&T from burdening customers of regulated service with costs of competitive services); *GTE Serv. Corp.*, 474 F.2d at 731 (approving ancillary jurisdiction over common carrier’s entry into computer services market because it is an area “intimately related to the communications industry . . . where such activities may substantially affect the efficient provision of reasonably priced communications service”).

^{126/} *Computer & Communications Indus. Ass’n*, 693 F.2d at 213 (quoting *General Tel. Co. of the Southwest v. United States*, 449 F.2d 846, 853 (5th Cir. 1971)).

^{127/} *Digital Broadcast Content Order* at 23565 ¶ 31 (“Here, the record shows that creation of a redistribution control protection system . . . is essential for the Commission to fulfill its responsibilities under the Communications Act and achieve long-established regulatory goals in the field of television broadcasting.”).

^{128/} *Disability Access Order* at 6455 ¶ 93 (“[I]n order for us to carry out meaningfully the accessibility requirements of section 255, requirements comparable to those under section 255 should apply to two information services that are critical to making telecommunications accessible and usable by people with disabilities.”); *Computer & Communications Indus. Ass’n*, 693 F.2d at 213 (upholding authority to regulate enhanced services).

^{129/} See *Midwest Video II*, 440 U.S. at 700-09 (invalidating FCC attempt to impose on cable companies under Title I the type of common carrier regulation that the Act would prohibit if the regulated parties had been broadcasters rather than cable companies); *Motion Picture Ass’n of*

this inherent limitation makes the Commission’s ancillary jurisdiction an especially appropriate tool for regulating IP-enabled services. The Internet owes much of its robust growth to the Commission’s light regulatory touch to date. By restricting its interventions in the field of IP-enabled services to those necessary to implement express statutory policies, the Commission will help fulfill Congress’s policy of “preserv[ing] the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, unfettered by Federal or State regulation” while retaining the flexibility to act when necessary.^{130/}

Here, the Commission’s assertion of jurisdiction to address the public policy concerns surrounding IP-enabled services would not remotely thwart, and is indeed necessary to promote, the substantive policy goals of the Communications Act. For example, Congress has specifically endorsed the Commission’s intervention in the market to protect access to emergency communications services (911),^{131/} and to ensure that service is accessible to people with disabilities.^{132/} Thus, any exercise of Commission authority under Title I to discharge these and other similar functions with respect to information service providers (or at least a subset of such providers, as SBC explains below) would be directly ancillary to the express statutory authority already afforded by Congress in other substantive provisions of the Act. So long as the Commission acts in direct furtherance of promoting or protecting the goals that Congress set forth in these provisions, the Commission’s exercise of its Title I authority would be reasonably ancillary to fulfilling its statutory responsibilities.

Am. v. FCC, 309 F.3d 796 (D.C. Cir. 2002) (invalidating FCC invocation of Title I to impose constitutionally problematic “video description” rules).

^{130/} 47 U.S.C. § 230(b)(2).

^{131/} *Id.* § 615.

^{132/} *Id.* § 255.

V. TO THE EXTENT THE COMMISSION DETERMINES THAT SOME REGULATION OF IP-ENABLED SERVICES IS WARRANTED, IT SHOULD LIMIT THAT REGULATION, AT LEAST INITIALLY, TO THOSE IP-ENABLED SERVICES THAT CONNECT WITH THE PSTN.

Even if the Commission determines that some regulation is in order to address certain policy concerns, it would not make sense simply to apply such regulations to all IP-enabled services across the board. IP-enabled services do not all raise the same public policy concerns, and, as the Commission has recognized, “any regulations [should be] applied to such services” only in “those cases in which they are appropriate.”^{133/} It therefore makes sense, as the Commission notes, to “differentiate among various IP-enabled services,” so that only those services that actually implicate the relevant policy issues are subject to regulation. Such an approach will ensure that, as Congress mandated, IP-enabled services “remain [otherwise] unregulated.”^{134/} And it will also ensure that the Commission’s ancillary authority, where exercised, is applied in a narrowly-tailored manner to serve valid public interest goals under the Communications Act.

Whether an IP-enabled service interconnects with the PSTN should be the minimum, “gating” criterion (at least for the foreseeable future) for determining whether a service should be subject to regulations that address public policy concerns. Such “interconnected” services are part of the seamless and ubiquitous communications network that allows all citizens of this country to communicate with one another (and across the globe). As such, they are most likely to raise issues similar to those raised by legacy circuit-switched services, which make up the bulk of that communications network today. And the Commission’s authority to regulate is at its apex where IP-enabled services interconnect with the PSTN because Congress has directly authorized

^{133/} *NPRM* ¶ 35.

^{134/} *Id.*

the Commission under both Titles I and II to protect the reliability, affordability, and accessibility of this country's communications network, and to ensure that the network is available as a tool for safeguarding life and property.^{135/}

IP-enabled services that are not connected to the PSTN, however, are not designed to operate as part of the nation's primary, open communications network. Such "closed" services allow communications only among a specific subset of users. Subscribers who opt for such services recognize that they are "off" the country's primary, interconnected communications network. "Closed" IP-enabled services do not, and are not designed to, meet all of a typical subscriber's communications needs. Indeed, in some cases — *e.g.*, Microsoft's X-Box Live — the IP-enabled service may allow "communications" among subscribers only for limited purposes, as an adjunct to something else — *e.g.*, playing video games. Subscribers' expectations with respect to such "closed" and defined services would be very different from those of an end user on the PSTN or a subscriber to a VOIP service connected with the PSTN, both of whom expect to be able to communicate with anyone, for any reason. The public policy issues — if any — associated with such "closed" services, and the Commission's interest in regulating them (and authority to do so), generally would be extremely limited. If the landscape shifts in the future, and other types of services become more ubiquitous and are used to satisfy consumers' basic communications needs in connection with or as a replacement for PSTN-based communications, the Commission can and should revisit these concerns as they apply to such services.

PSTN-connectedness therefore should be a necessary criterion for the application of any Commission public policy-based regulations. But it may not be a sufficient criterion in all cases.

^{135/} *See, e.g.*, 47 U.S.C. §§ 151, 254, 255.

The Commission should adopt additional criteria where necessary to tailor the regulatory requirement narrowly to the services that trigger the concern. For example, not all IP-enabled services that interconnect with the PSTN may present similar emergency calling concerns. It is most important to ensure that IP-enabled services that are used for *voice* applications offer 911 calling capabilities; this concern would not be present with a data-only service, even if connected to the PSTN. As the Commission has recognized in another context, consumers are likely to have an expectation that a communications service will serve as an emergency calling tool if it not only is interconnected with the PSTN, but also offers “real-time, two-way voice service.”^{136/} The Commission should therefore adopt “voice capabilities” as an additional criterion for the application of any emergency calling related rules. In other cases — *e.g.*, the application of any numbering or number portability rules — the use of NANP numbers would be an appropriate necessary criterion.^{137/}

Using the PSTN interconnection criterion as an initial cut-off for whether a service might be regulated offers a bright-line, easily implemented test that sidesteps the quagmire that would result from the use of the alternative criteria suggested in the *NPRM*. For example, functional equivalence or substitutability, two tests mentioned by the *NPRM*, are overly subjective and could be over- or underinclusive. Whether a particular VOIP service is “functionally equivalent” to or substitutable for traditional voice service, for example, is not a straightforward question. Most VoIP services offer far *more* functionality than traditional voice. On the other hand, some VoIP services provide voice, yet are not useful for calling all other voice customers, as in the

^{136/} Memorandum Opinion and Order, *Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, 18 FCC Rcd 25340, 25347 ¶¶ 18-19 (2003) (“*E911 Scope Order*”).

^{137/} See *infra* section VI for a full discussion of the appropriate criteria.

case of Pulver’s service. Whether the services are “equivalent” or “substitutable” therefore requires additional definition of what the relevant criteria will be; otherwise, the test will be: “I know it when I see it.” The PSTN-connectivity test is a far more objective approach.

Further, basing any regulation on the simple (initial) test of whether a service interconnects with the PSTN presents an appropriate alternative to determining whether to regulate IP services, functionalities, or facilities based on “layers” — physical (or “facility”), logical (or “protocol”), applications, and content.^{138/} The layered model is, at bottom, an engineering concept that does not readily translate into a regulatory paradigm for the IP world. There is no consensus about how to define the “layers” of Internet-related communications for regulatory purposes or, for that matter, even for engineering purposes. For example, information theorists have often described the layered structure of data communications using the Open Systems Interconnection (“OSI”) model, which identifies seven layers of functionality, while network engineers routinely depart from the specifics of that model.^{139/} And there is likewise no consensus about how to characterize certain services or facilities, such as ATM switching, within any chosen layering hierarchy. Finally, no matter what layering model might be chosen, the layers themselves fluctuate over time: for example, new generations of IP functionality can be said to occupy both the first and second layers of the traditional layered model.^{140/} All of these uncertainties could be expected to give rise to an unstable and contentious regulatory regime.

^{138/} NPRM ¶ 37.

^{139/} See, e.g., Joshua L. Mindel, *Refinements of a Layered Model for Telecommunications Policy*, 1 J. Telecomm. & High Tech. L. 69, 71 (2002) (stating that the layered approach “can be plagued by numerous shortcomings”).

^{140/} See, e.g., George Gilder, *Testimony for Telecommunications Policy: A Look Ahead* (Senate Committee Hearing Apr. 28, 2004) (describing an “all-optical network” in which fixed wavelengths of light “can function as both the physical and logical layers,” because the intelligence that routes the message “is embedded in the path” itself).

Moreover, as MCI's white paper reveals,^{141/} proponents of a layering approach often begin with the obsolete presumption that legacy incumbent providers have market power on the physical transmission layer and must demonstrate a basis to avoid regulation that otherwise would automatically apply. That presumption is flatly wrong, as SBC discusses below, and SBC's approach is far more likely to help the Commission address the IP environment through first principles, undistorted by yesterday's regulatory and market realities.

Even if the Commission ultimately were to choose a layered model, the end result ultimately should be the same. There is no basis for regulation of any entity's IP services or IP networks because no provider is dominant at any layer. Thus, wireline carriers should be subject to no special regulation in the IP sphere, notwithstanding MCI's suggestion to the contrary.^{142/} While MCI has advanced the mistaken premise that wireline broadband providers are dominant at the physical layer, cable operators are in fact the leading providers of residential and small business broadband service and control approximately *two-thirds* of all high-speed lines provided to mass-market customers.^{143/} And the availability and use of alternative broadband technologies — such as 3G mobile wireless, fixed wireless, BPL, and satellite — is steadily

^{141/} See Richard S. Whitt, "A Horizontal Leap Forward: Formulating A New Public Policy Framework Based On the Network Layers Model" (MCI Public Policy Paper Mar. 2004).

^{142/} See *id.*

^{143/} See VoIP Fact Report at A-1 (stating that cable companies control "more than *two-thirds* of all high-speed lines provided to residential and small-business customers" and "more than 83 percent of the most rapidly growing segment of mass-market broadband lines"); K. Burney, In-Stat/MDR, *The Data Nation: Wireline Data Services Spending and Broadband Usage in the US Business Market; Part Three: Small Businesses (5 to 99 Employees)* (Dec. 2003); see also *United States Telecom Ass'n v. FCC*, 290 F.3d 415, 428-29 (2002) ("*USTA I*") (invalidating line-sharing mandate in light of "the robust competition, and the dominance of cable, in the broadband market"); *USTA II*, 359 F.3d at 585 (upholding elimination of broadband unbundling obligations because (inter alia) "intermodal competition from cable ensures the persistence of substantial competition in broadband").

increasing.^{144/} Likewise, traditional interexchange carriers such as AT&T and MCI control an overwhelming share of the enterprise business market.^{145/} Their advocacy for disproportionately heavy regulation of ILECs should be seen for what it is: self-interested protectionism. Nor, of course, are wireline providers dominant at any applications layer. To the contrary, as discussed in SBC's pending petitions, the market for IP-enabled services is subject to open and robust competition at all layers.^{146/} Thus, properly understood, the layered model actually cuts strongly in favor of *unregulation* of wireline providers — and certainly of less regulation for them than for the cable and other providers that currently lead the field in their respective markets.

VI. THE COMMISSION SHOULD PROMPTLY ADDRESS INTERCARRIER COMPENSATION AND NUMBERING ISSUES AND THEN ADDRESS OTHER IMPORTANT POLICY CONCERNS RAISED BY IP-ENABLED SERVICES.

As noted above, IP-enabled services raise certain legitimate, and in some cases pressing, public policy concerns. The Commission has clear authority to address those issues by applying or crafting appropriate rules to the extent necessary. In some cases, it should exercise that authority; in others, it should simply affirm that it has the authority to apply or craft such rules in the future should the need arise.

^{144/} See VoIP Fact Report at A-8 (“The Commission has already recognized that, in addition to cable and DSL, there are numerous additional platforms and technologies already competing in or poised to enter the broadband mass market, including power lines, fixed wireless, 3G mobile wireless, and satellite.”); see generally *id.* A-8 to A-19 (describing broadband offerings by alternative technologies).

^{145/} See *id.* at A-19 (describing a report showing “that it is AT&T and the other large interexchange carriers — not the ILECs — that dominate” the market for large business customers); *id.* at 28 (“Competing carriers lead in the provision of IP-based services to enterprise customers, just as they do in the provision of old packet-switched services like ATM and Frame Relay.”).

^{146/} See SBC Declaratory Ruling Petition at 11-14.

As discussed below, the most pressing substantive concerns that arise in connection with IP-enabled services (in addition to the jurisdiction and classification issues discussed above) are (1) the uncertainty concerning the intercarrier compensation obligations of IP-enabled service providers that send traffic onto or receive traffic from the PSTN, and (2) the extent to which IP-enabled service providers should be entitled to make use of NANP numbering resources, and what rules should apply if they do. Proper and timely resolution of these two issues is essential to creating an equitable and rational framework for efficient investment in, and removing barriers to the further deployment of, IP-enabled services. Intercarrier compensation as it applies to IP-enabled services is currently fraught with uncertainty, which some providers have exploited as an opportunity for regulatory arbitrage. The confusion is destabilizing and discourages efficient investment, and the Commission therefore should swiftly pronounce that — until the agency adopts a unified intercarrier compensation regime — IP-enabled service providers must pay interstate access charges when they send traffic to or receive traffic from the PSTN. At the same time, the Commission’s numbering rules, which restrict VoIP providers’ direct access to numbering resources, are unnecessarily limiting technological and service innovation without any countervailing benefit. The Commission should modify its rules to permit VoIP providers (and other IP-enabled service providers) direct access to numbering resources as long as they meet criteria demonstrating their intent to provide service.

The Commission should act on these two imperative issues immediately, preferably by the end of this year; because these issues are discrete, it need not await resolution of all other public policy issues that are before it to decide these issues. Nonetheless, these other public policy issues also deserve the Commission’s prompt attention. One of the more pressing of these areas is public safety as it relates to the emergency calling capabilities of IP-enabled services.

As discussed, the industry has made substantial progress on its own in this area. But because ensuring basic emergency access is imperative for safeguarding life and property, Commission leadership and involvement in this area, at least in helping to establish national standards, is warranted. The Commission also should address disability access for IP-enabled services to ensure that access is incorporated early in the development stage of this new technology before new barriers are inadvertently created.

Proliferation of IP-enabled services also requires a new approach to universal service. *First*, the Commission should revisit its universal service contribution requirements and affirm that it has authority to require support from IP-enabled services providers; otherwise, as traffic migrates off the PSTN, the universal service burden on legacy service providers and their customers will increase significantly. *Second*, the Commission should confirm that, while IP-enabled services are not (and should not) be supported today, the Commission has the authority to provide support for these services at some point in the future if and when it determines such support is warranted under the Act. *Finally*, it is conceivable, although not likely, that the spread of IP-enabled services may require minimal, targeted Commission oversight to ensure that certain consumer protections not covered by general consumer protections statutes are addressed. But on the whole, the market for such services is sufficiently robust as to make such regulation unnecessary.

A. The Commission Should Promptly Clarify the Intercarrier Compensation Obligations Applicable to IP-Enabled Services that Make Use of the PSTN.

One of the most destabilizing trends in the modern communications industry is escalating uncertainty about the ground rules for how the Internet and IP-enabled services affect intercarrier compensation. Several years ago, profound regulatory doubt about the compensation issues related to ISP-bound dial-up traffic led to massive industry dislocations as regulation-driven

arbitrage opportunities arose and were then belatedly corrected. And that same uncertainty threatens to resurface today on a much larger scale unless the Commission addresses the intersection of IP-enabled services with the traditional access charge regime in a critical set of circumstances: where providers of IP-enabled services make use of the PSTN not to reach their own subscribers, but to reach third parties that are not their customers and with whom they have no contractual relationship, such as PSTN end users at the terminating end of a VoIP call.

The consequences of such uncertainty are unfortunate. The surest way to depress investment in any industry is to sow confusion about what the ground rules are for competition and everyday operations.^{147/} And the surest way to distort the competitive trajectory of any industry is to permit arbitrary inconsistencies in those rules to create arbitrage opportunities that allow inefficient competition to flourish. Such uncertainty and arbitrage will be this Commission's legacy unless it acts now to reject proposals by many VoIP providers to carve out a new, arbitrary exception to the access charge regime. Specifically, those providers seek immunity from an obligation to pay access charges for traffic they hand off to the PSTN, even though a PSTN subscriber receiving a call placed by a VoIP subscriber is not receiving an information service, but simply a basic telephone call over the PSTN. In the long term, the Commission should resolve the controversy about this issue by adopting a unified scheme of intercarrier compensation for the industry as a whole. In the short term, however, particularly given the central role that access charges now play in keeping end user rates affordable and compensating for carriers' actual costs, the Commission should reaffirm that such providers owe

^{147/} Indeed, Congress has specifically directed the Commission to "remove barriers to infrastructure investment" for advanced services. 47 U.S.C. § 157(a) note.

access charges for traffic terminated on the PSTN, regardless of whether the service they provide to their own customers in IP format is classified as an information service.

As an initial matter, this result is already required by the Commission's existing rules, under which any providers that use ILEC local exchange switching facilities, including information service providers, are subject to the baseline obligation to pay access charges unless specifically exempted. The sole exemption the Commission has created is a narrow one that exempts an information service provider from access charges only with respect to the connection between it and its own customer. The Commission accordingly should enforce the access charge obligation where IP-enabled services originate or terminate on the PSTN in the same manner as they do with respect to traditional telecommunications services, unless or until the Commission adopts a unified regime for intercarrier compensation generally. By applying its access charge rules in a uniform and competitively neutral manner to *all* users of local switching facilities, the Commission will achieve its stated goal of ensuring that the costs of the PSTN are paid for by all that use it,^{148/} while eliminating opportunities for regulatory arbitrage and preserving a critical component of ILECs' ability to provide communications services at affordable rates.^{149/}

^{148/} See *NPRM* ¶ 33 (“As a policy matter, we believe that any service provider that sends traffic to the PSTN should be subject to similar compensation obligations, irrespective of whether the traffic originates on the PSTN, on an IP network, or on a cable network. We maintain that the cost of the PSTN should be borne equitably among those that use it in similar ways.”).

^{149/} SBC previously presented many of these arguments in its opposition to Level 3's petition for forbearance from the application of access charges to certain VoIP services. See *Opposition of SBC Communications Inc., Level 3 Communications LLC Petition for Forbearance Under 47 U.S.C. § 160(c) from Enforcement of 47 U.S.C. § 251(g), Rule 51.701(b)(1), and Rule 69.5(b), Docket No. 03-266, at 9-18 (filed Mar. 1, 2004)* (“SBC Opposition to Level 3 Forbearance Petition”). SBC incorporates those arguments by reference, and restates them here for purposes of ensuring a complete record in this proceeding.

1. The Commission Should Enforce Its Existing Access Charge Rules For Traffic That Originates or Terminates on the PSTN.

Providers of IP-enabled services that originate and terminate traffic on the PSTN have always been considered users of access services and are subject to the baseline requirement to pay access charges, except to the precise extent to which the Commission has specifically exempted them from that requirement in defined circumstances.^{150/} As discussed below, while the ESP exemption applies when information service providers use the PSTN to connect with their own subscribers, it has never been extended to a situation in which information service providers use the PSTN to connect with third parties to whom they are not providing an information service. Finally, as further explained below, the 1996 Act preserved that obligation by grandfathering the Commission's existing access charge rules in section 251(g).

The Commission's access charge obligation applies broadly to all users of access services, not just interexchange carriers — and even the latter category is defined broadly to encompass an array of access customers.^{151/} As the Commission observed long ago, information service providers — then referred to as “enhanced service providers” — are “[a]mong the variety of users of access service,” which also includes facilities-based carriers, resellers, sharers, privately owned systems, and others.^{152/} As such, they “obtain[] local exchange services or

^{150/} Although the Commission states that it does not intend to address “whether charges apply or do not apply under existing law,” it asks for comment concerning the authority under which it can require providers of IP-enabled services to pay access charges. *NPRM* ¶ 61. As explained herein, the Commission's existing access charge rules provide that authority.

^{151/} See, e.g., 47 C.F.R. § 69.5(b); Memorandum Opinion and Order, *Investigation of Access and Divestiture Related Tariffs*, 97 F.C.C.2d 1082, 1182 (1984) (defining interexchange carrier as “any individual, partnership, association, joint-stock company, trust, governmental entity or corporation engaged for hire in interstate or foreign communication by wire or radio, between two or more exchanges”).

^{152/} Memorandum Opinion and Order, *Petitions for Reconsideration of MTS and WATS Market Structure*, 97 F.C.C.2d 682, 711-12 ¶ 78 (1983) (“*MTS/WATS Market Structure Order*”).

facilities which are used, in part or in whole, for the purpose of completing interstate calls which transit [the ISP's] location," which the information service provider then "connects . . . to another service or facility over which the call is carried out of state."^{153/} For that reason, the Commission stated at the time it created the access charge regime that its "intent was to apply these carrier's carrier charges to interexchange carriers, and to all resellers and *enhanced services providers*."^{154/} The Commission subsequently reiterated that it "initially intended to impose interstate access charges on enhanced service providers for their use of local exchange facilities to originate and terminate their interstate offerings."^{155/}

Instead, however, the Commission devised its "ESP exemption." Specifically, the Commission exempted information service providers from paying access charges on the connections to their subscribers and permitted them to obtain the access services necessary to receive their *subscribers'* traffic through "end user" lines ordered under LECs' local business tariffs, subject to an additional surcharge designed to substitute, to some extent, for the direct payment of access charges.^{156/} This arrangement did not convert information service providers

^{153/} *Id.*

^{154/} *Id.* at 711 ¶ 76(emphasis added).

^{155/} Notice of Proposed Rulemaking, *Amendments of Part 69 of the Commission's Rules Relating to Enhanced Service Providers*, 2 FCC Rcd 4305, 4305 ¶ 2 (1987).

^{156/} *MTS/WATS Market Structure Order* at 711-15 ¶¶ 77-83; Memorandum Opinion and Order, *Filing and Review of Open Network Architecture Plans*, 4 FCC Rcd 1, 167-68 ¶ 318 (1988).

from being “[a]mong the variety of users of access service”^{157/} into true “end users;” rather, they were merely treated as end users “for pricing purposes.”^{158/}

Further, the history and application of the ESP exemption make clear that the exemption was never intended to be a blanket waiver of *all* access charges in connection with any use of ILEC local exchange switching facilities in which the information service provider may engage. The ESP exemption was designed specifically and exclusively to exempt traffic between an information service provider and its customers, a policy reflecting the fact that, when the exemption was adopted in 1983, the Commission was seeking to spare fledgling enhanced services providers from having to bear what were then significant entry costs.^{159/}

But the Commission never suggested that the exemption would extend to traffic sent by an information service provider to a customer on the PSTN that is not its own customer (for example, a party called by the ISP’s customer).^{160/} With respect to such traffic, the PSTN end user is not the customer of the ISP and is certainly not receiving an information service; when the call originates or terminates on the PSTN, it looks to the PSTN subscriber precisely like any other PSTN-based call. On that PSTN leg of the call, then, the information service provider

^{157/} *MTS/WATS Market Structure Order* at 711-12 ¶ 78.

^{158/} Declaratory Ruling and Notice of Proposed Rulemaking, *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, 14 FCC Rcd 3689, 3701 ¶ 17 (1999) (“*ISP Inter-carrier Compensation Order*”).

^{159/} *MTS/WATS Market Structure Order* at 711-15 ¶¶ 77-83.

^{160/} In fact, prior to the advent of the IP-enabled services addressed in this proceeding, the Commission had no reason even to consider the application of access charges to information services traffic that terminated on the PSTN, since information service providers historically used the PSTN only to send or receive calls from subscribers seeking access to their information service. *See, e.g., 1997 Access Charge Reform Order* at 16132-33 ¶ 343 (stating that the ESP exemption applies to information service providers when they “use incumbent LEC networks to receive calls from their customers”) (emphasis added).

should have the same obligation to pay access charges as any other user of an ILEC's local switching facilities.

Indeed, even AT&T, a large payor of access charges and a staunch advocate for overbroad interpretations of the ESP exemption, was forced to acknowledge the limits of the ESP exemption in a recent *ex parte* filed with the Commission: “[T]he Commission has squarely rejected the claim that ‘enhanced service providers’ are categorically exempt from interstate access charges even when they offer telecommunications services; rather, it has held that the exemption applies to any entity (whether ‘traditional IXC’ or ‘enhanced service provider’) that provides enhanced services (but only to the extent that it is providing such services).”^{161/} In this context, IP-to-PSTN VoIP providers cannot avoid access charges on the PSTN end of an interexchange call, where the PSTN subscriber participates by means of a telecommunications service, simply because they provide their end users on the IP end with an “enhanced” (information) service.^{162/}

The Commission has never deviated from its view that information service providers are users of access services. And it certainly has not suggested that the scope of the access charge obligation has changed since its inception. To the contrary, section 251(g), added by the 1996 Act, expressly provides that “exchange access, information access, and exchange services for such access” would be provided “to interexchange carriers and information service providers” in the same manner as they had been prior to the Act’s passage, “including receipt of

^{161/} Letter from D. Lawson, Counsel for AT&T, to M. Dortch, CC Docket No. 02-361, at 3 (Apr. 13, 2004).

^{162/} We use the term “IP-PSTN” to collectively describe traffic that originates in IP and terminates on the PSTN as well as traffic that originates on the PSTN and terminates in IP, unless otherwise noted.

compensation.”^{163/} Because providers of IP-enabled services are users of access services to the extent they rely on the PSTN for the origination or termination of traffic, as opposed to using it merely to enable their own customers to access an information service, they are subject to the baseline obligation to pay access charges on any portion of a call that originates with or terminates to an end user on the PSTN that is not the customer of that particular provider — unless and until the Commission modifies its access charge rules.

The D.C. Circuit’s decision in *WorldCom, Inc. v. FCC* does not require a different result.^{164/} There, the D.C. Circuit held that section 251(g) did not exempt ISP-bound traffic from section 251(b)(5) because it found that there were no rules governing the intercarrier compensation for that traffic when the 1996 Act was enacted. But there clearly *were* rules governing the payment of access charges for PSTN-originated and PSTN-terminated traffic.^{165/} Indeed, those rules have been in place since 1983. Thus, the status quo under the Commission’s existing rules is that access charges apply to IP-PSTN services, unless an exception applies or until the Commission changes those rules in the future.

This conclusion is consistent with the logic in the Commission’s recent *AT&T Access Charge Order*.^{166/} As the Commission stated in that decision, “[W]e see no benefit in promoting one party’s use of a specific technology to engage in arbitrage at the cost of what other parties are entitled to under the statute and our rules, particularly where, based on the record before us, end users have received no benefit in terms of additional functionality or reduced prices.”^{167/}

^{163/} 47 U.S.C. § 251(g).

^{164/} *WorldCom, Inc. v. FCC*, 288 F.3d 429 (D.C. Cir. 2002).

^{165/} *See* 47 C.F.R. § 69.5(b).

^{166/} *See AT&T Access Charge Order* ¶ 1.

^{167/} *Id.* ¶ 17.

Rather, the Commission properly recognized that such a service should be subject to access charges to eliminate opportunities for regulatory arbitrage. The Commission explained, “[E]xempting from interstate access charges a service such as AT&T’s that provides no enhanced functionality would create artificial incentives for carriers to convert to IP networks.”^{168/} The same is true for genuine IP-enabled services, which likewise offer no enhanced functionality to a party on the PSTN (*e.g.*, a LEC’s customer) who calls or is called by the customer of an IP-enabled service provider. In such cases, the LEC’s customer is not receiving anything other than ordinary voice telephone service. While the provider of the IP-enabled service may pick up (or drop off) the call over a broadband connection and provide some enhanced functionality to *its* customer, the LEC customer obtains nothing other than a standard telephone call, which uses standard CPE, a standard NANP telephone number, and experiences no change in form or content.^{169/} In short, providers of IP-enabled services should pay for their access to, and use of, the PSTN, just as any other service provider is required to do.^{170/}

A VoIP provider cannot invoke the ESP exemption to avoid that obligation because the customer originating or receiving the call on the PSTN is *not* a customer of the VoIP provider. Hence the ESP exemption does not apply. Nor would it matter whether a CLEC or an IXC stands between the VoIP provider and the LEC that originates or terminates the call over the PSTN. The VoIP provider is using the PSTN facilities of the originating or terminating LEC and must pay for that use. Indeed, for access charge purposes, this situation is no different from traditional scenarios in which a long distance carrier purchases the services of a competitive

^{168/} *Id.* ¶ 18.

^{169/} *Report to Congress* at 11541-44 ¶¶ 84-89.

^{170/} *NPRM* ¶ 33.

access provider or other CLEC for some portion of the link between its network and the originating LEC's end user. In that context, the long distance carrier must pay the originating LEC for whatever portion of the service it obtains from that LEC.^{171/} Thus, calls from a VoIP customer that terminate over ILEC switching facilities to a PSTN subscriber are subject to terminating access charges; calls from a PSTN subscriber to a VoIP customer that originate over ILEC switching facilities are subject to originating access charges.^{172/} In no event would the originating LEC owe compensation to the CLEC intermediary.

In all of these cases, the application of access charges is a necessary transitional means of preserving industry stability, pending the adoption of a unified intercarrier compensation regime, as traffic migrates from the PSTN to VoIP. Particularly in the access charge context, “[a]voidance of market disruption pending broader reform is, of course, a standard and accepted justification for a temporary rule.”^{173/}

^{171/} See Declaratory Ruling, *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, 14 FCC Rcd 3689 ¶ 9 (1999) (“When two carriers jointly provide interstate access (e.g., by delivering a call to an interexchange carrier (IXC)), the carriers will share access revenues received from the interstate service provider.”), *vacated and remanded on other grounds*, *Bell Atl. Tel. Cos. v. FCC*, 206 F.3d 1 (D.C. Cir. 2000); Memorandum Opinion and Order, *Waiver of Access Billing Requirements and Investigation of Permanent Modifications*, 2 FCC Rcd 4518 ¶ 2 (1987) (stating that carriers’ tariffs include two options related to the joint provision of access services, the second of which, meet point billing, “require[s] the LECs involved to divide ordering, rating and billing services on a proportional basis, so that each carrier billed under its respective tariff”); see also Second Report and Order and Third Notice of Proposed Rulemaking, *Expanded Interconnection with Local Telephone Company Facilities*, 8 FCC Rcd 7374 ¶ 1 (1993) (requiring expanded interconnection for switched transport services).

^{172/} Given the geographic indeterminacy of telephone numbers used in an IP environment, there may be billing requirements that pose challenges in applying access charges to IP-PSTN traffic in some instances. But such implementation challenges should not prevent the Commission from articulating the rule that interstate access charges do, in fact, apply to IP-PSTN traffic, and addressing any challenges on a case-by-case basis.

^{173/} *Competitive Telecomm. Ass’n v. FCC*, 309 F.3d 8, 14 (D.C. Cir. 2002) (upholding EELs restrictions designed in part to preserve special access revenues); accord *Competitive Telecomm.*

A contrary result would also be unreasonably discriminatory, in that it would grant preferential treatment to one particular class of service providers that uses the PSTN in the same way as others who are indisputably required to pay access charges. Such a decision would give the exempt providers a substantial unwarranted cost advantage over carriers that provide competing voice services using the same traditional circuit-switched facilities, allowing VoIP providers to pay lower rates for providing a voice product to their end users. Only through a uniform application of the access charge obligation can the Commission foreclose the competition-skewing incentives it described in rejecting AT&T's proposal for an access charge loophole.^{174/} More generally, as the Commission itself recognizes, "any service provider that sends traffic to the PSTN should be subject to similar compensation obligations, irrespective of whether the traffic originates on the PSTN, on an IP network, or on a cable network. We maintain that the cost of the PSTN should be borne equitably among those that use it in similar ways."^{175/}

In addition to asking whether access charges should apply when IP-enabled services use the PSTN (and they already do as a matter of law), the Commission seeks comment on whether it should create a two-tiered regime, in which providers of IP-enabled services are effectively entitled to discounted access services as compared to traditional telecommunications providers offering functionally equivalent services.^{176/} In particular, a few carriers have suggested that IP-

Ass'n v. FCC, 117 F.3d 1068, 1073-75 (8th Cir. 1997) (upholding interim access charge obligations in UNE context despite claimed lack of statutory authorization for them).

^{174/} See *AT&T Access Charge Order* ¶ 18.

^{175/} *NPRM* ¶ 33.

^{176/} *NPRM* ¶ 62.

enabled service providers should pay reciprocal compensation instead of access charges.^{177/} For the reasons just discussed, the Commission should not depart from its existing intercarrier compensation rules in this manner.^{178/} Such a regulatory system would produce the same irrational arbitrage and competitive asymmetries described above.^{179/}

Finally, insulating providers of IP-enabled services from paying access charges for traffic they send to a LEC's customer on the PSTN would harm consumers by threatening universal service and ILECs' ability to maintain affordable end user rates. The Commission has long recognized that its universal service policies are linked to the ability of ILECs to offer affordable communications services, which is itself largely dependent on a combination of multiple sources of income, including access charges.^{180/} As SBC explained at length in its comments on Level 3's forbearance petition,^{181/} access charge reform must proceed in unison with universal service reform and, as necessary, adjustments to end user rates, to make up any shortfalls caused by reductions in access charges. Such reform must be conducted on an integrated basis, not in a one-sided fashion that will benefit only a select group of providers while exposing ILECs to

^{177/} See Level 3 Communications LLC Petition for Forbearance Under 47 U.S.C. § 160(c) from Enforcement of 47 U.S.C. § 251(g), Rule 51.701(b)(1), and Rule 69.5(b), WC Docket No. 03-266, at 31-34 (filed Dec. 23, 2003); see also *NPRM* ¶ 62 (asking whether carriers should be required to pay compensation under section 251(b)(5) of the Act rather than access charges).

^{178/} In addition, there is no reason to believe that state-ordered reciprocal compensation rates would be sufficient to recover the costs associated with the provision of access services. The fact that reciprocal compensation rates have been judged reasonable in one context in no way suggests that they remain so with respect to access services.

^{179/} The Commission should not, however, prevent carriers from *voluntarily* developing innovative interconnection services to meet marketplace demands.

^{180/} Sixth Report and Order, *Access Charge Reform*, 15 FCC Rcd 12962, 12965-74 ¶¶ 5-28 (2000) (“*CALLS Order*”) (discussing the history of the Commission's regulations governing intercarrier compensation and universal service).

^{181/} See SBC Opposition to Level 3 Forbearance Petition at 6-9.

massive regulatory arbitrage that will jeopardize affordable telephone service for consumers and businesses. Accordingly, the Commission should immediately act to preserve, rather than erode, affordable telephone service by declaring that IP-enabled service providers must pay access charges when they send traffic to, or receive traffic from, non-customers on the PSTN — unless and until the Commission adopts a unified regime for intercarrier compensation.^{182/}

2. The Commission Should Apply Interstate Access Charges to All IP-Enabled Services That Use the PSTN.

The Commission should clarify not only that IP-enabled service providers must pay access charges for their use of the PSTN for communications with non-customers, but also that the applicable charges are *interstate* access rates. This is the approach that is most consistent with the recognition that IP-enabled services are indivisibly interstate. Moreover, applying a single access charge regime to all IP-enabled service traffic will bring stability and certainty to intercarrier compensation obligations in this area, while allowing ILECs to maintain affordable local telephone service, pending the adoption of a unified regime for intercarrier compensation generally.

The Commission should reaffirm its existing rule that, when an ILEC's local exchange switching facilities are used for the provision of jurisdictionally interstate services, as is the case with IP-PSTN traffic for the reasons discussed above, the use of those facilities "by definition

^{182/} We recognize that some Internet service providers may offer VoIP services to their subscribers over "local" dial-up connections that use advanced software compression algorithms or next generation high-speed modems. In these circumstances, the end-user would be a customer of the ISP and would use the PSTN to access the ISP. Thus, under existing rules, the ESP exemption would apply, and compensation arrangements for such traffic would be governed by the Commission's compensation rules for ISP-bound traffic. Of course, to the extent the end-user dials a long-distance call to reach her ISP, the carrier of that long-distance call would owe jurisdictionally appropriate access charges — intrastate charges if the ISP and the end user were located in the same state, interstate charges if they were not.

constitute[s] a part of the interstate access service” and are governed by interstate access rules.^{183/} That rule applies even though such services or facilities may, in limited instances, include an intrastate component. The Commission reached this precise jurisdictional conclusion when it ruled that DSL service is jurisdictionally interstate and is thus properly tariffed at the federal level, even though some of the traffic it carries “may be destined for intrastate or even local Internet websites or databases.”^{184/}

Moreover, for the same basic reasons (discussed above) that it would be impracticable to jurisdictionally divide IP-enabled services up into distinct interstate and intrastate spheres, it would likewise be impracticable to apply different compensation rules depending on whether the IP packets associated with any given call cross state borders. Just as the Commission found it would be infeasible to impose such a regime for jurisdictional purposes on Pulver’s service,^{185/} the Commission should also find that such geographical tracking would be inappropriate in determining compensation rules for any IP-enabled services — both because IP packets travel with geographic unpredictability across the global Internet and because of the geographically indeterminate nature of IP-enabled services.

^{183/} *Bill Correctors v. Pacific Bell*, 10 FCC Rcd 2305 ¶ 17 n.41 (1995) (citing *California v. FCC*, 567 F.2d 84 (D.C. Cir. 1977)); see 47 C.F.R. § 69.1(a) (establishing “rules for access charges for interstate or foreign access services”); *id.* § 69.2(b) (stating that “[a]ccess [s]ervice includes services and facilities provided for the origination or termination of any interstate or foreign telecommunication”).

^{184/} *GTE Order* at 22478-79 ¶ 22; Memorandum Opinion and Order, *Telerent Leasing Corp.*, 45 F.C.C.2d 204, 218 ¶ 36 (1974) (asserting federal jurisdiction over the interconnection of customer-provided communications equipment with the PSTN, stating that “this Commission has repeatedly exercised jurisdiction over facilities and instrumentalities used in interstate communication despite the circumstance that such facilities are used also to provide intrastate service”) (citations omitted).

^{185/} *Pulver Declaratory Ruling* at 3320-21 ¶ 21.

The application of interstate access charges for all IP-to-PSTN traffic is also the most reasonable approach from an economic perspective. As IP-enabled services become widespread, many subscribers will use them as replacements for ordinary circuit-switched telephony. To ensure industry stability during the transition to a unified intercarrier compensation regime, LECs should not receive diminished compensation when they originate or terminate traffic over the PSTN. That compensation traditionally would involve the assessment of reciprocal compensation for local calls, interstate access charges for long distance calls that cross state boundaries, and intrastate access charges for toll calls that remain within state boundaries. Of those three types of payment obligations, reciprocal compensation typically is the lowest and intrastate access charges are the highest. Interstate access charges, which fall in between, thus serve as a rough proxy for the compensation that PSTN providers would receive in the absence of wholesale conversions to IP-enabled services. Indeed, depending on customer traffic patterns, use of interstate access charges may somewhat *understate* what PSTN providers would otherwise receive because, at least in the near term, flat-rated VoIP services may be attracting heavy users of circuit-switched toll services, for which compensation is recovered *exclusively* through interstate and (higher) intrastate access charges.^{186/} Nonetheless, although inexact, the approach proposed here will provide stability during the intervening period before the Commission adopts a unified solution to the question of intercarrier compensation generally. Finally, the Commission has already determined that existing interstate access charges are reasonable as a form of compensation for the termination of interstate traffic. The Commission has approved

^{186/} See VoIP Fact Report at 16, 18; *VoIP fast becoming Mainstream Service yet multiple standards still exist*, M2 Presswire, 2004 WL 74988509 (Apr. 26, 2004).

such charges as consistent with sections 201 and 202 of the Act, and it has removed implicit universal service support from them in connection with the CALLS and MAG plans.^{187/}

In declaring that interstate access charges are applicable to IP-enabled services that originate or terminate in circuit-switched format on the PSTN, the Commission must also permit carriers to adopt effective mechanisms for preventing fraud in the implementation of such a declaration. In particular, the Commission should authorize ILECs to include provisions in their interstate access tariffs and interconnection agreements that would require providers to pay the highest access charge that could otherwise be applied, whether interstate or intrastate, in the event they are discovered to have disguised (or assisted in disguising) jurisdictionally interstate IP-to-PSTN calls as local circuit-switched calls for purposes of evading the access charge regime. Further, the Commission should declare that, when a dispute arises about whether particular traffic is subject to interstate access charges as IP-to-PSTN traffic, the burden of proof is on the provider of the IP-to-PSTN services (*i.e.*, a party[ies] sending traffic to or picking traffic up from the PSTN) to demonstrate that the traffic is not subject to interstate access charges. The Commission should also take swift and strong enforcement action against any party that engages in access charge fraud. Indeed, if the Commission does no more than declare that interstate access charges apply without providing sufficient incentives for compliance with those access charge obligations, it will only encourage providers to engage in unlawful access avoidance schemes, thereby requiring ILECs to expend substantial time and resources to

^{187/} See *CALLS Order* at 12975-76 ¶ 32; Second Report and Order and Further Notice of Proposed Rulemaking, *Multi-Association Group (MAG) Plan for Regulation of Interstate Services of Non-Price Cap Incumbent Local Exchange Carriers and Interexchange Carriers*, 16 FCC Rcd 19613, 19617 ¶ 3 (2001) (“*MAG Order*”).

investigate and prosecute the perpetrators. But if the Commission implements the measures discussed above, it can send a clear signal that access charge fraud will not be tolerated.

If, however, the Commission is for any reason unwilling at this time to adopt the uniform application of interstate access charges for IP-to-PSTN calls as proposed by SBC, the Commission must not take any action that will undermine the ability of SBC or any other local exchange carrier to maintain affordable local telephone service for American consumers and businesses. Thus, in the event the Commission does not apply interstate access charges uniformly to IP-PSTN calls (or otherwise chooses not to resolve the issue of intercarrier compensation for IP-enabled services in a timely manner), the Commission should, at a minimum, expeditiously affirm that local telephone companies should continue to charge “jurisdictionalized” compensation rates for IP-PSTN traffic (notwithstanding its interstate nature) in accordance with their existing tariffs — at least until the Commission completes its intercarrier compensation proceeding. Existing tariffs of local exchange carriers contain various methods to deal with the lack of geographically accurate endpoint information, such as the use of calling party number information together with other data.^{188/} Such an affirmation from the Commission is critically important to ensure that local telephone companies are protected from unlawful access charge avoidance schemes that could jeopardize the affordability of local rates during the transition to a unified intercarrier compensation regime.

^{188/} See, e.g., Pacific Bell Telephone Company Schedule Cal. P.U.C. No. 175-T, Section 2.3.14; Pacific Bell Telephone Company Tariff F.C.C. No. 1, Section 2.3.14. Until the Commission addresses the access charge issues raised in this proceeding or otherwise changes its access charge rules, these provisions continue to govern the application of access charges to IP-to-PSTN services.

B. The Commission Should Adopt Numbering Policies That Promote the Development of IP-Enabled Services and Facilitate Competition While Preventing Number Wastage.

IP-enabled service providers that wish to provide access to the PSTN must obtain North American Numbering Plan (“NANP”) telephone numbers for their customers; otherwise, those customers could not receive calls from subscribers to a circuit-switched network. As discussed below, the Commission’s current rules limit direct access to NANP numbering resources to certified (state or federal) telecommunications carriers, a class that excludes providers of IP-enabled services, which, as discussed above, are information service providers. Although IP-enabled service providers may obtain such numbers *indirectly* by partnering with a competitive LEC, such arrangements may not reflect the most efficient network architectures and may impede the development of innovative services. The Commission should thus amend its numbering rules to place IP-enabled service providers on competitive par with telecommunications carriers with regard to access to numbering resources. Failure to do so would violate the Commission’s obligation under section 251(e) of the Act to “make [NANP] numbers available on an equitable basis,” a mandate the Commission itself has properly interpreted to preclude numbering rules that, like those at issue here, “unduly favor or disadvantage any particular industry segment or group of consumers” or “unduly favor one technology over another.”^{189/}

Of course, the Commission must ensure that numbering resources are not wasted or exhausted. Accordingly, the Commission can and should ensure that providers of IP-enabled services meet basic criteria designed to show their readiness and intent to use the numbering

^{189/} Public Notice, *FCC Establishes North American Numbering Council Advisory Committee*, 11 FCC Rcd 22367, 22368 (1996).

resources they obtain, just as it does with telecommunications carriers.^{190/} And the Commission should impose basic numbering conservation measures on all IP-enabled service providers that use numbers, including those that rely on telecommunications carriers to obtain numbers for them. There has been some speculation that VoIP, like virtual NXX (“VNXX”), paging, and certain other services, may exacerbate number exhaustion concerns because end users can obtain several numbers without regard to geographic location. The Commission should certainly monitor such concerns, but it should also recognize that some VoIP offerings may *reduce* number exhaustion by enabling subscribers to consolidate existing lines for voice and data, for example.

Finally, the Commission should ensure that VoIP providers that obtain the benefits of numbering — whether directly or indirectly — meet the basic responsibilities that accompany those benefits. Today, telecommunications carriers alone are subject to number portability obligations. But VoIP providers that use numbers to provide competing voice services may not themselves be directly subject to such obligations. Subscribers that use VoIP thus would have a unique disincentive to switch to a competing service because they would be unable to take their numbers with them. This can warp competition both between VoIP and legacy services and among VoIP services. The Commission accordingly should enforce local number portability obligations with respect to VoIP providers that use numbers, and it has clear authority to do so.

^{190/} See, e.g., Third Report and Order and Second Order on Reconsideration, *Numbering Resource Optimization*, 17 FCC Rcd 252, 256-57 ¶ 7 (2001) (“*Third Numbering Order*”); Second Report and Order, *Numbering Resource Optimization*, 16 FCC Rcd 306, 310 ¶ 4 (2000); Report and Order and Further Notice of Proposed Rulemaking, *Numbering Resource Optimization*, 15 FCC Rcd 7574, 7579-80 ¶ 6 (2000) (“*First Numbering Order*”).

1. IP-Enabled Service Providers That Meet Certain Essential Requirements Should Be Given Direct Access to NANP Numbering Resources.

Many VoIP services in the market today allow customers on a broadband IP network to call parties served by a carrier operating on a time division multiplexed (“TDM”) network that is part of the PSTN, and vice versa. In order for such calls to be possible, the VoIP provider must be able to assign a telephone number to its customer; otherwise, a customer on the PSTN would have no way of dialing the VoIP customer. VoIP providers, however, are information service providers, which are not eligible for direct assignment of telephone numbers under the Commission’s existing rules. This is because section 52.15(g)(2)(i) of the Commission’s rules provides that numbering applicants must be “authorized to provide service in the area for which the numbering resources are being requested.”^{191/} The Commission has interpreted that rule as requiring “carriers [to] provide, as part of their applications for initial numbering resources, evidence (e.g., state commission order or state certificate to operate as a carrier) demonstrating that they are licensed and/or certified to provide service in the area in which they seek numbering resource[s].”^{192/}

Accordingly, in order to obtain NANP telephone numbers that can be assigned to their customers, VoIP providers often purchase a retail product from a competitive LEC, such as a Primary Rate Interface (“PRI”) ISDN line. Typically, the VoIP provider also uses this retail product to interconnect with the PSTN so it can send and receive certain types of traffic between its network and various carrier networks.^{193/} In this arrangement, the competitive LEC

^{191/} 47 C.F.R. § 52.15(g)(2)(i).

^{192/} *First Numbering Order* at 7613 ¶ 97.

^{193/} Many VoIP providers convert VoIP traffic from IP format to circuit-switched format before delivering that traffic to a LEC.

terminates the VoIP traffic on the PSTN or delivers that traffic to another carrier for termination on the PSTN.^{194/}

While this form of interconnection may allow the VoIP provider to obtain numbering resources (by purchasing a PRI) and interconnection with the PSTN, it may not be the most efficient or cost-effective means for a VoIP provider to send originating traffic to the PSTN because it requires separate interconnection with potentially multiple end office switches, using access products that may be limited in terms of availability and scalability. In particular, a VoIP provider's ability to offer service may be limited by the locations, calling scopes, and installation schedules of the providers and products utilized to gain access to end-offices.^{195/}

Thus, in many ways, the current situation faced by VoIP providers seeking direct interconnection with the PSTN is analogous to the early days of the commercial wireless industry. Initially, many wireless carriers did not own their switches and instead relied on ILECs to perform switching functions for them. As a result, wireless carriers needed to interconnect with individual ILEC end offices to route traffic. This is known as "Type 1" interconnection.^{196/} As the wireless industry matured and wireless carriers began purchasing switches of their own,

^{194/} As discussed in Section VI.A of these comments, when interexchange traffic is delivered to an incumbent LEC for termination on the PSTN, the incumbent LEC is entitled to receive access charges for that traffic under the Commission's current rules, regardless of whether that traffic originated in IP format on a broadband network. VoIP providers, and the other carriers they partner with, are not permitted to terminate interexchange traffic to an incumbent LEC using PRI lines.

^{195/} For example, PRI lines are not available in all central office serving areas.

^{196/} See Declaratory Ruling, *The Need to Promote Competition and Efficient Use of Spectrum for Radio Common Carrier Services*, 2 FCC Rcd 2910, 2913-14 ¶¶ 27-35 (1987) ("Wireless Declaratory Ruling"); FCC Policy Statement on *Interconnection of Cellular Systems*, attached as Appendix B to Memorandum Opinion and Order, *The Need to Promote Competition and Efficient Use of Spectrum for Radio Common Carrier Services*, 1986 LEXIS 3878 (1986) ("Wireless Policy Statement").

they sought more efficient means of interconnection with the PSTN, both at ILEC end offices and at ILEC tandem switches, which became known as “Type 2” interconnection.^{197/} In facilitating this latter form of interconnection, the Commission recognized that it may offer “superior technical capabilities and greater service quality,”^{198/} and may help wireless carriers to “minimize unnecessary duplication of switching facilities and the associated costs to the ultimate consumer.”^{199/} The Commission further observed that Type 2 interconnection allows wireless carriers to design their networks more efficiently and would further the Commission’s “longstanding goal of bringing cellular service to the public as rapidly as possible.”^{200/} At the same time, the Commission recognized that wireless providers also needed efficient access to numbering resources, which were not “owned” by the ILECs (or CLECs today),^{201/} but are instead a “public resource.”^{202/} The Commission concluded that wireless carriers, just like the ILECs, were “entitled to reasonable accommodation of their numbering requirements.”^{203/}

Much like the wireless industry’s early efforts to evolve from Type 1 to Type 2 interconnection, amending the Commission’s rules to allow VoIP providers to obtain numbering resources directly from the North American Numbering Plan Administrator (“NANPA”) and /or the Pooling Administrator (“PA”) would level the inter-modal playing field. By interconnecting with the PSTN on a trunk-side basis, at a centralized switching location — *e.g.*, a tandem switch

^{197/} *Wireless Declaratory Ruling* at 2913 ¶ 27.

^{198/} *Id.*

^{199/} *Wireless Policy Statement* at *32-33 ¶ 2 (citation omitted).

^{200/} *Wireless Declaratory Ruling* at 2913 ¶ 29, 2914 ¶ 33.

^{201/} *Wireless Policy Statement* at *34-35 ¶ 4.

^{202/} *See Report and Order, Administration of the North American Numbering Plan*, 11 FCC Rcd 2588, 2591 ¶ 4 (1995).

^{203/} *Wireless Policy Statement* at *34-35 ¶ 4.

— VoIP providers can more efficiently utilize their softswitches and gateways^{204/} to develop services that overcome the availability and scalability limitations inherent in the current methods of line-side interconnection to end office switches.

In fact, it is quite clear that the Commission’s original rules were never intended to restrict full access to numbering resources by service providers who are willing and able to use NANP numbers to serve customers. As the Commission’s *First Numbering Order* explained in 2000, carriers were at that time routinely requesting and obtaining numbers *before* being certified by the state to provide service, “result[ing] in highly inefficient distribution of numbering resources” because numbers frequently sat idle pending certification and actual need.^{205/} To avoid such waste, the Commission enacted not only the rule at issue here, but also 47 C.F.R. § 52.15(g)(2)(ii), which requires applicants to “be capable of providing service within sixty (60) days of the numbering resources activation date.”^{206/} The *Order* emphasizes, however, that neither regulation was intended to prevent *bona fide* applicants, who will actually use the numbers to provide service, from receiving them.^{207/}

^{204/} A “gateway” or “media gateway” is a device that can receive circuit switched, TDM traffic and packetize it and deliver it to an IP-based network. A media gateway can be combined with, or separate from, a softswitch, which routes packetized traffic on the IP-based network.

^{205/} *First Numbering Order* at 7613-14 ¶¶ 94, 96.

^{206/} 47 C.F.R. § 52.15(g)(2)(ii).

^{207/} *First Numbering Order* at 7615 ¶ 99 (Commission “d[id] not intend to circumscribe any carrier’s ability to obtain initial numbering resources in order to initiate service;” its rule was designed only “to prevent actual or potential abuses of the number allocation process;” and it, “[i]n fact, . . . expect[ed] the establishment of these requirements to make more numbering resources available to carriers lawfully authorized by state commissions to provide local service by preventing unauthorized carriers from unlawfully depleting numbering resources.”). The Industry Numbering Committee’s (INC) rules, which are incorporated by reference in the Commission’s own rules, likewise express a clear preference that numbers be associated with actual facilities, precisely because such facilities help demonstrate “readiness” to provide service. 47 C.F.R. § 52.13(b)(3) (incorporating by reference the guidelines of the North

Here, so long as VoIP providers have the facilities at hand to put their numbers to use, there is no principled justification for denying them access to NANP numbers simply because they lack a state certificate. The reason they cannot obtain such a certificate — their status as information service providers — is irrelevant to their ability to use those numbers. And the Commission can ensure that such providers will not waste their numbers by permitting direct assignment of numbering resources only to those providers offering services to the public that: (1) own or control a softswitch connected to the PSTN via tandem interconnection; (2) provide connectivity to the PSTN using a traditional TDM signaling and SS-7 functionality; and (3) provide location routing number (“LRN”) functionality for implementation of local number portability. These criteria will demonstrate the “facilities readiness” that the Commission considers an important indicator of a numbering applicant’s intention and ability to use the numbers it receives. In addition, by requiring providers to invest in facilities that interconnect with the PSTN in the manner described above, these criteria will help ensure that such providers have an incentive to safeguard the integrity of the PSTN, as well as their own IP networks.

This approach would be fully consistent with and indeed would advance the Commission’s obligation to make sure that numbers are available on an equitable basis.^{208/} And the Commission also has and should exercise the authority, as a condition for granting those numbers, to ensure that VoIP providers comply with other measures designed to prevent number wastage and support the costs associated with numbering administration. Those measures might, in some instances, have to be adapted to the specific circumstances of the IP-enabled services market and IP technologies under the Commission’s Title II non-carrier-specific authority and/or

American INC); *Thousands-Block Number (NXX-X) Pooling Administration Guidelines*, INC 99-0127-023, § 4.3.1.2 (clarifying that the 60-day requirement is satisfied by “facilities readiness”).

^{208/} See 47 U.S.C. § 251(e)(1).

its Title I ancillary authority, but they are relatively straightforward and not unduly burdensome. Specifically, IP-enabled service providers should comply with the following:

- *Contribution to Numbering Administration Costs:* Wireline and wireless service providers are required to contribute to numbering administration costs on the basis of their revenues.^{209/} IP-enabled service providers that obtain numbers directly from the NANPA likewise should be required to contribute to the costs of numbering administration, which include pooling and portability administration costs. This, in turn, would require IP-enabled service providers to comply with the Commission's revenue reporting requirements in order to allow the North American Numbering Plan Billing and Collection ("NBANC") agent to determine the appropriate contribution for a given provider. Like other service providers, IP-enabled service providers would be exempt from a contribution obligation if they fall below the *de minimis* threshold in the Commission's rules.^{210/}

- *Number Pooling:* The Commission should also extend its thousand-block number pooling requirements to providers that obtain their numbers directly. Number pooling is an important policy that helps to prevent over-distribution of numbers that may not be utilized. The Commission identified NANPA's prior practice of allocating numbers in pools of 10,000 as "one of the major drivers of [number] exhaust."^{211/} With thousand-block number pooling, blocks of 10,000 numbers (all of the numbering resources from a single NXX code) are broken up into sequential blocks of 1,000 numbers each (down to the NPA-NXX-X level). The 10 blocks of

^{209/} See *id.* § 251(e)(2); 47 C.F.R. § 52.17.

^{210/} See *e.g.*, 47 C.F.R. § 52.17(a) (no contributions below \$25). Of course, providers that obtain numbers through an ILEC or CLEC indirectly contribute to the support for numbering costs by increasing the LEC's revenues.

^{211/} *First Numbering Order* at 7621-22 ¶ 116.

1,000 numbers are allocated within one rate center, but they can be allocated to multiple service providers. IP-enabled service providers that seek direct access to numbers should be required to implement the necessary technology so that they can use 1,000 number blocks where appropriate to meet their forecast requirements.

- *Reporting Requirements:* Like carriers that use numbering resources, IP-enabled service providers should be required to report Number Resource Utilization/Forecast (“NRUF”) data as a condition of direct access to NANP numbers from NANPA or the PA.^{212/} To prevent number wastage, all entities using numbering resources should be required to demonstrate their plans to utilize those numbers and then confirm that they have done so. At the same time, to minimize the administrative burdens on emerging IP-enabled service providers, SBC suggests that the Commission impose modified reporting requirements for IP-enabled service providers. IP-enabled service providers, who would be getting numbers directly for the first time (if the Commission amends its rules to permit that), should not initially be required to provide a 5-year forecast because they lack sufficient experience and data to support such a forecast. The 5-year forecast requirement should be suspended until a provider requests its fourth block of numbers in any rate center (*i.e.*, requests more than 3,000 numbers), until the provider exceeds one full NPA-NXX (10,000) where Number Pooling is not implemented, or, in the event the provider reaches neither of these numbering resource utilization thresholds, until three years after the provider first receives numbering resources directly from NANPA or the PA.

Finally, although SBC has focused on number exhaust issues relating to numbers that VoIP providers might obtain directly from NANPA or the PA, there may be IP-enabled service providers that seek to continue obtaining numbers indirectly through other carriers (*e.g.*, by

^{212/} 47 C.F.R. §§ 52.15(f)(4)-(5).

purchasing PRI lines). They, too, should be required to comply with certain basic reporting requirements. Such providers should, for example, have to comply with utilization reporting requirements that may apply to carriers that use “intermediate” numbers, such as resellers.^{213/}

2. The Commission Should Monitor the Impact of VoIP Services on Number Exhaustion.

Given the finite nature of NANP numbers and the extraordinary cost that would be incurred upon their depletion, the Commission has a valid interest in preventing number exhaustion and wastage. But it is not clear that VoIP service presents any immediate — or indeed, any — cause for special concern. It is true that VoIP services do permit end users to obtain multiple numbers, without any connection to their physical location. But that concern is not unique to VoIP services. Even before such services began to proliferate, paging companies, and CLECs offering virtual NXX, began presenting similar concerns. Further, VoIP services may actually cause a countervailing *reduction* in number usage. IP technology permits consolidation of many services, permitting a subscriber to have one connection for voice and data, for example. As such services proliferate, more and more end users can be expected to give up second lines, thus freeing up some numbering resources.

Until the Commission determines whether and to what extent there is a problem, it should refrain from trying to fashion any type of service-specific rules designed to prevent number exhaustion. Such rules likely would stunt technological and service innovation without producing measurable benefits; the Commission cannot simply turn back the clock and insist that

^{213/} See North American Numbering Plan Numbering Resource Utilization/Forecast (“NRUF”) Report, Form 502, at 2 (rev. June 1, 2002) (“Carriers that receive intermediate numbers must report utilization data for such numbers”); *id.* at 4 (“Intermediate reporting carriers are not required to complete a forecast form. This exception only applies to carriers that operate solely as intermediate carriers.”).

numbers be assigned so that they correlate exclusively to the end user's primary location. The Commission can best contribute to preventing number exhaustion tomorrow if today it confines itself to understanding the scope of the problem and to working with the industry to explore the best means of addressing it.

One issue the Commission should consider in particular when it undertakes that process is the growing concern about whether NANP numbers are now being distributed, or will soon be distributed, to customers located *outside* the United States and other NANP countries as a means for enabling them to avoid international charges. Vonage has suggested, for example, that it is actively investigating the option of procuring NANP numbers for international subscribers physically outside the United States and Canada.^{214/} If this practice becomes widespread, such that much of the world's population begins claiming U.S. telephone numbers, it will rapidly deplete the finite stocks of 10-digit NANP numbers. And, once those numbers are depleted, it will cost many billions of dollars to retrofit the current telecommunications infrastructure to accommodate a different numbering scheme.^{215/} These are very serious concerns, and the Commission should seek comment on an expedited basis on how it can develop methods for preserving North America's finite numbering resources without unduly interfering with the flexibility of IP-enabled services.

3. The Commission Should Require VoIP Providers That Use Numbers to Offer Number Portability.

The Commission should impose local number portability obligations on VoIP providers that utilize numbers (directly or indirectly) to offer enhanced voice applications, so that VoIP

^{214/} http://www.vonage.com/features_int_vir_numbers.php (“[Q:] Will Vonage offer International Virtual Numbers outside of Canada? [A:] We are expanding our network rapidly, but are not yet announcing locations outside of Canada.”).

^{215/} *Third Numbering Order* at 256-57 ¶ 7 nn.8-9.

providers do not distort competition by making it impractical for their subscribers to switch service providers. Today, telecommunications carriers alone must offer number portability.^{216/} If equivalent obligations are not imposed on their VoIP competitors, such portability could become a one-way street.^{217/} VoIP providers that obtain the benefits of numbering — whether directly from NANPA or the PA, or indirectly from a LEC partner — should not obtain an unfair competitive advantage when they do so.

As the Commission has recognized, number portability is essential to reducing the “switching costs” that interfere with free consumer choice even in an otherwise competitive environment.^{218/} IP-enabled service providers that use numbering resources to compete with local exchange carriers should have no special advantages in this regard and no special means of pressuring their customers to stick with their existing service simply to avoid the personal disruption that accompanies a change in telephone numbers. In short, like all other competitors, they should be required to allow subscribers to take their numbers with them. The Commission should work with the industry to determine technological means of accomplishing such

^{216/} See 47 U.S.C. § 251(b)(2) (local exchange carriers must offer number portability)

^{217/} Today, the typical VoIP provider relies on a telecommunications carrier partner to obtain numbers for it. When a LEC’s customer asks to port her number to the VoIP provider, the number is actually ported behind the scenes to the telecommunications carrier partner, which assigns it to the VoIP provider. The VoIP provider may frustrate the customer’s efforts to port her number *back* to the LEC in the event she becomes dissatisfied with her VoIP service, because the VoIP provider does not today have any explicit portability obligations, and the telecommunications carrier partner does not itself have any direct relationship with the customer.

^{218/} See, e.g., Memorandum Opinion and Order and Further Notice of Proposed Rulemaking, *Telephone Number Portability*, 18 FCC Rcd 23697 (2003); First Report and Order and Further Notice of Proposed Rulemaking, *Telephone Number Portability*, 11 FCC Rcd 8352, 8355 ¶ 2 (1996) (“*Number Portability Order*”) (“Congress has recognized that number portability will lower barriers to entry and promote competition in the local exchange marketplace.”).

portability (to the extent there are any unique concerns) and to establish a timetable for compliance.

The Commission's authority to impose local number portability requirements is not constrained to the local exchange carriers covered by the language in section 251(b)(2) of the Act. As an initial matter, the Commission has specifically based number portability requirements in other contexts in part on its Title I authority, wholly apart from any Title II authority.^{219/} In addition, as a "belt and suspenders" approach, the Commission could exercise its exclusive authority to ensure "equitable" availability of numbering resources under section 251(e) of the Act to specify that full and effective number portability is a condition of any VoIP provider's direct or indirect use of numbering resources.

C. The Commission Should Participate in Developing National Standards for IP-Enabled 911 Services, and It Has the Authority to Fashion 911 Rules for the Provision of Certain IP-Enabled Services, If It Determines Such Rules Are Necessary.

As IP-enabled services that provide voice applications (such as VoIP) proliferate, such services should provide the responsive and accurate emergency calling capabilities that end users have come to expect from legacy telecommunications services. Because that is not yet uniformly the case, this issue merits Commission involvement and leadership in the near term to ensure that the industry is appropriately addressing this challenge. Today, technological and other limitations make the 911 calling capabilities offered over VoIP services more cumbersome and less effective than those offered over the PSTN. All VoIP providers cannot yet offer their subscribers 911 service that automatically routes emergency calls directly to a public safety

^{219/} See *id.* at 8355 ¶ 4 (extending portability requirements to wireless carriers, which have not been classified as "local exchange carriers" (*see* 47 U.S.C. § 153(26)), based on independent authority under sections 1, 2, 4(i), and 332 of the Act).

answering point (“PSAP”). Nor can they offer their customers automated “E-911” capabilities — that is, the automatic transmission to the PSAP of information identifying the location of the customer — without relying on the customer to manually input and update his or her location information.

The Commission has jurisdiction to address this issue, and it should do so. However, it may not be necessary to heavily regulate in this area. The industry is diligently working to address the current 911 shortcomings of VoIP. The Commission may be able to best serve the public interest here by encouraging those efforts and helping to establish uniform, minimal standards.

1. The Commission Has Ample Authority to Address 911 Obligations for IP-Enabled Services that Interconnect with the PSTN and Provide Voice Capabilities.

Even if IP-enabled services are classified (as they should be) as information services, the Commission has clear authority to address the 911 obligations for IP-enabled services and service providers.^{220/} The Commission has recognized that, “from the inception of the Federal Communications Commission through to the present day,” it has been charged with “ensuring that the public safety needs of Americans are met to the extent that those needs must be

^{220/} The Commission must take the lead here. Because IP-enabled services are provided on a national basis, the providers cannot realistically comply with the varied and probably incompatible demands of thousands different PSAPs and fifty different states. Commission leadership is necessary because “specific requirements, . . . vary[ing] significantly from one state to another,” would yield “mutually incompatible systems . . . likely to cause user confusion or higher costs in equipment or services.” Notice of Proposed Rulemaking, *Revision of the Commission’s Rules to Ensure Compatibility With Enhanced 911 Emergency Calling Systems*, 9 FCC Rcd 6170, 6172 ¶ 11 (1994) (“1994 E-911 Order”).

transmitted by wire or radio communications to emergency service personnel.”^{221/} The Commission has described this as a “statutory mandate[] under the Communications Act,”^{222/} flowing from Title I of the Act.^{223/} Specifically, section 151 of the Act gives the Commission the general authority to make available communications on a national basis, with adequate facilities, “for the purpose of promoting safety of life and property through the use of wire and radio communication.”^{224/} As the Commission has noted, “it is difficult to identify a nationwide wire or radio communication service more immediately associated with promoting safety of life and property than 911.”^{225/} And section 251(e)(3), enacted as part of the Wireless Communications and Public Safety Act of 1999, authorizes (and requires) the Commission to establish 911 as the universal emergency telephone number for the nation.^{226/} These sections, together with the Commission’s general authority to make rules and regulations as necessary to fulfill its duties under the Act,^{227/} empower the Commission “to determine whether the public interest require[s]

^{221/} Report and Order and Second Further Notice of Proposed Rulemaking, *Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, 18 FCC Rcd 25340, 25346 ¶ 14 (2003).

^{222/} Report and Order and Further Notice of Proposed Rulemaking, *Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, 11 FCC Rcd 18676, 18681 ¶ 8 (1996) (“1996 E-911 Order”).

^{223/} *Id.*

^{224/} 47 U.S.C. § 151.

^{225/} *1994 E-911 Order* at 6171-72 ¶ 7.

^{226/} 47 U.S.C. § 251(e)(3).

^{227/} *See id.* § 154(i).

that a provider of a particular service should be required to provide 911/E911 to its customers, and if so, to what extent and in what time frame”^{228/}

Nothing in section 151 or section 251(e)(3) suggests that the Commission’s 911 authority is limited to telecommunications carriers, and there is no reason it should be. If IP-enabled information services are essential to “promoting safety of life and property,” as they increasingly will be to the extent consumers rely on them as their primary voice communications tool, they are plainly covered by the Commission’s mandate. As Congress noted in the Wireless Communications and Public Safety Act, the Commission is obligated to preserve a “seamless, ubiquitous, and reliable end-to-end infrastructure for communications . . . to meet the Nation’s public safety . . . needs.”^{229/} And as Congress recognized, “emerging technologies can be a critical component of the end-to-end communications infrastructure.”^{230/} In these circumstances, the Commission’s ancillary authority to promote the goals of the Act and “discharge its overall responsibilities” by overseeing 911 obligations of IP-enabled services is beyond question.^{231/}

In a different context, the Commission has defined four criteria that serve as appropriate “gating” criteria for those services that should be subject to 911 obligations. In determining which wireless providers should be subject to E-911 obligations, the Commission considered whether (1) the service “offers real-time, two-way voice service that is interconnected to the public switched network;” (2) customers “have a reasonable expectation of access to 911 or

^{228/} NPRM ¶ 53 n.162 (citing Memorandum Opinion and Order, *Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, 18 FCC Rcd 25340, 25345-46 ¶¶ 13-15 (2003) (“*E911 Scope Order*”).

^{229/} 47 U.S.C. § 615.

^{230/} See *id.* § 615 note (e); Wireless Communications and Public Safety Act of 1999, Pub. L. No. 106-81, 113 Stat. 1286 (codified at 47 U.S.C. §§ 222, 251(e)).

^{231/} See *Southwestern Cable*, 392 U.S. at 177.

E911 services;” (3) the service competes with traditional voice service; and (4) the service can technically and operationally support E-911.^{232/} These basic criteria serve as an appropriate test for those IP-enabled services that would be most clearly within the Commission’s 911-related ancillary jurisdiction. Specifically, those IP-enabled services that interconnect with the PSTN and offer subscribers a voice service are those from which subscribers are most likely to expect 911 capabilities.

2. The Commission Should Work with Industry Stakeholders to Establish National 911 Standards for IP-Enabled Services.

The complexities involved in implementing the E-911 requirements for wireless providers offer ample evidence that designing and enforcing acceptable and standardized 911 solutions for IP-enabled services will be neither easy nor quick. The Commission has an important leadership role to assume, and it should do so now to help establish clear standards on which the industry can develop IP-enabled technology and equipment. Establishing standards now will help prevent the disruption and costs associated with retrofitting a solution if, after providers invested in separate, ad hoc solutions, the Commission determined that uniform standards were required. As demonstrated by the 911 wireless implementation experience, attempting to implement uniform standards after years of ad hoc industry development creates numerous technical pitfalls, needlessly consuming time, money, and resources.^{233/}

The wireless 911 implementation also highlights the importance of centralized coordination given the number of affected stakeholders. In addition to countless commercial

^{232/} *E911 Scope Order* at 25347 ¶ 18.

^{233/} In the wireless example, national standards still did not exist some sixteen years after wireless service was first introduced in 1983. *See 1996 E-911 Order*. Between 1983 and 1996, the wireless industry generated multiple protocols that ignored previous ANI and ALI call delivery conventions. This proliferation of inconsistent protocols ultimately resulted in a 911 implementation with increased costs and a longer implementation timeframe.

stakeholders and agencies at the local, state, and federal level, there are more than six thousand primary and secondary PSAPs^{234/} of varying size, resources, and capabilities.^{235/} Addressing technology and standardization issues among so many stakeholders and across jurisdictional divisions between federal, state, and local governments requires strong, national leadership from the Commission.

In considering the 911 standards for IP-enabled services, the Commission should consider and build on the progress that IP-enabled service providers have made working cooperatively with public agencies to date. And the Commission should be careful not to deter the substantial technological contributions that IP-enabled services can make with respect to the provision of E-911 services. The 911 infrastructure technology has not changed significantly since the 1970s and has been upgraded only through a series of patchwork fixes and short-term solutions. The standards fashioned for IP-enabled services must leave room for continued technological development and innovation, and should not cramp such development in order to fit within the framework of a technologically outdated or limited system.

Registered E-911: The Commission and industry resources should focus on the immediate need for E-911 services in VoIP applications where the subscriber has registered his or her location with the VoIP provider. Many such services are already offered today.^{236/} SBC-

^{234/} See http://www.nena.org/911_facts/911fastfacts.htm.

^{235/} Dale N. Hatfield, *A Report on Technical and Operational Issues Impacting the Provision of Wireless Enhanced 911 Services* at 18 (2002) (“Hatfield Report”).

^{236/} VoIP Fact Report at 17 (citing Time Warner Cable, *Time Warner Cable Maine Frequently Asked Questions* (http://www.twcdigitalphone.com/maine/faq_specialfeatures.htm#Can%20I%20call%20911) (“enhanced 911 service is provided” in Time Warner’s current VoIP markets); *Cox Communications Inc. at Citigroup Smith Barney Entertainment, Media & Telecom Conference — Final*, Fair Disclosure Wire (Jan. 7, 2004) (“Cox’s voice over IP architecture provides customers the same lifeline services, traditional, standard LEC telephone service, including enhanced 911.”); *Cable Operators See Advantages to*

IP's HIPCS service, for example, includes E-911 service based on the location of the customer's workstation.^{237/} And independent VoIP providers may purchase and use SBC's 911 services^{238/} to offer E-911 services to their own customers. SBC's 911 services allow the VoIP provider to build and maintain their end users' station numbers and associated location records in the E-911 database. In other words, the VoIP provider is responsible for updating each of its end users' initial IP addresses with their fixed physical addresses. Once this information is in the E-911 database, the VoIP provider may transport its end users' 911 calls (with Automatic Number Identification ("ANI")) to the appropriate selective router, and SBC-IP's 911 service will route and deliver the 911 call and the 911 caller's ANI and Automatic Location Identification ("ALI") to the correct PSAP.^{239/}

Regulating VoIP, Communications Daily (May 4, 2004) ("[Bill Dame, Cox dir.-network switch engineering] said Cox has 'gone the extra mile' to assure high quality of service, including capabilities to add E911"); see also M. Paxton, *Cable Telephony Service: The Third Leg of Cable's "Triple Play" Bundle*, In-Stat/MDR at 24 (Nov. 2003) ("While it is not a powered lifeline connection, Optimum Voice will offer E-911 emergency service."); A. Quinton, *et al.*, Merrill Lynch, *VoIP Update* (Dec. 1, 2003) ("Vonage . . . offer[s] a form of 911 service."); Net2Phone Presentation at 13, *FCC VoIP Forum* (Dec. 1, 2003) ("NCT [Net2Phone Cable Telephony] has a 911 solution in place today."); Covad Press Release, *Covad Announces Voice Over Internet Protocol (VoIP) Deployment Plans* (Feb. 9, 2004) ("Covad . . . announced plans to offer Voice over Internet Protocol (VoIP) services to business customers and consumers . . . [with] emergency 911 . . . [as a] standard feature[.]").

^{237/} The accuracy of this 911 service is dependent upon end users to maintain accurate station number and location records in SBC's E-911 database.

^{238/} A 911 service, available to all VoIP providers, is SBC's Private Switch/Automatic Location Identification ("PS/ALI") product (also known as PS/911 or Locator ID, depending on the geographic region). VoIP providers that are also CLECs may use SBC's existing service ordering/provisioning process for CLECs to provision their customer records in the SBC E911 database. Both options provide VoIP providers with direct interconnection with the 911 network, thereby routing 911 calls (and the caller's location) directly to the appropriate PSAP operator.

^{239/} The accuracy of the records in the E-911 database (and, in turn, the accuracy of the E-911 service) is dependent upon the VoIP provider's maintenance of accurate station number and location records.

The Commission should work with the industry to ensure that all providers of IP-enabled, PSTN-connected services using NANP numbers to provide voice applications can provide E-911 for their registered VoIP services, and do so according to uniform national standards. The first step the Commission should take is to engage actively with the VoIP industry, the Alliance for Telecommunication Solutions (“ATIS”), the Emergency Services Interconnection Forum (“ESIF”), and the National Emergency Number Association (“NENA”) to ensure the development of national standards. These organizations are already actively undertaking efforts to address VoIP 911.^{240/} Commission leadership will help avoid the potential proliferation of multiple incompatible standards, which would substantially increase the cost, complexity, and timeframe of IP-enabled 911 deployment. By driving the development and acceptance of industry interface standards, the Commission would ensure that VoIP providers can consistently and effectively deliver accurate 911 information to the correct PSAPs, and that consumers can obtain consistent service across providers. Furthermore, if the Commission works with the industry to develop mutually acceptable standards, any need for regulations in the future may be reduced or even eliminated.

^{240/} Indeed, NENA and VoIP industry participants already have forged an agreement on key elements of providing emergency 911 service to VoIP users. *See* Media Advisory, “Public Safety and Internet Leaders Connect on 911,” (Dec. 1, 2003) *available at* <http://www.intrado.com/assets/documents/VoIP%20VON-NENA%20Agreement.pdf>; AT&T Presentation at 20, *FCC VoIP Forum* (Dec. 2003) (“The National Emergency Number Association (NENA) and VoIP leaders, including AT&T Consumer, reached an agreement on key principles for providing 911 services to VoIP users.”); *see also* Written Statement of Michael K. Powell, Chairman, Federal Communications Commission, on Voice over Internet Protocol (VoIP) at 12 (Feb. 24, 2004) (“Powell VoIP Written Statement”). Other voluntary industry efforts include ATIS’s new “IP Coordination Ad Hoc Committee,” recently launched by ATIS’s Emergency Services Interconnection Forum (“ESIF”) to contribute to the planning, development, and architectural design of an overall IP-based enhanced 911 system. *See* Media Advisory, “ATIS Webinar: VoIP and E911 Critical Implementation Issues” (Feb. 11, 2004) *available at* <http://www.aits.org/PRESS/pressreleases2004/021104.htm>.

Any such standard also must take into account differences among types of IP-enabled services. For example, enterprise VoIP deployments, like traditional PBX, are not inherently capable of providing PSAPs with station level information (*i.e.*, the caller's phone number and precise location within the main address from which the call is placed). SBC's PS/ALI 911 service, described above, helps resolve this issue. To address the portability of VoIP end users within an enterprise, SBC and other companies have contracted with Telcordia to develop 911 interface specification standards that accommodate VoIP technologies for enterprise customers. Telcordia's interface development efforts are designed to allow IP-enabled service providers to support the proper routing of emergency calls initiated by IP enterprise customers, as well as the delivery of the associated detailed location information to PSAPs. The Commission's regulations should accommodate, not thwart, these industry-based efforts to develop 911 solutions for enterprise VoIP.

Non-registered E-911: IP-enabled services are generally portable across all broadband access points within and beyond the United States; in other words, subscribers can access their VoIP service from any location where they can access a broadband connection. While this presents enormous upside potential for IP-enabled services, it also presents significant challenges to providing E-911 service. A provider has no way of knowing, in advance, the location at which its customer will be using the service: theoretically, a customer could access his or her VoIP service anywhere there is a broadband connection. In this scenario, the provider has no way of knowing the customer's geographic location unless the customer notifies his or her provider of that geographic location.^{241/}

^{241/} A possible short-term solution is to rely on the end user to update his geographic location each time he ports his service to a new broadband connection point.

The Commission should avoid premature regulation in this area, given the technological challenges that are yet to be addressed. As the Commission recognizes in the *NPRM*, the “development and deployment of these services [are] in [their] early stages, . . . [and] these services are fast-changing and likely to evolve in ways that we cannot anticipate.”^{242/} Indeed, until some technological solutions have been identified, regulation could predetermine the outcome, potentially limiting technological developments and innovation. There is sufficient market-based pressure in the industry to come up with a solution even without a government mandate to do so, as illustrated by the voluntary 911 efforts that some providers have already made to date, described above; similar strides are to be expected with respect to portable E-911.

IP-Enabled E-911 Enhancements: As noted above, IP-enabled services are not solely a source of 911 concerns; they also present 911 opportunities. The introduction of IP-enabled 911 services will expand the range of 911 services beyond voice to support multimedia options that aim to improve the utility, quality, and quantity of information passed between the caller and the PSAP operator. Already, some providers are developing next-generation capabilities that will exceed the E-911 capabilities available on the circuit-switched network.^{243/} Bi-directional video communications, made possible by packet technology, could convey invaluable information from the emergency caller to the PSAP operator and vice versa. For instance, a caller could provide real-time video of the emergency situation, enabling both the PSAP operator and

^{242/} *NPRM* ¶ 53.

^{243/} See VoIP Fact Report at 17 (citing H. Weaver, *McCain: Rules Must Change to Accommodate Services Like VoIP*, RCR Wireless News (Mar. 1, 2004) (quoting Vonage’s chairman as stating that his company “plans to leapfrog enhanced 911 and go right to intelligent 911 that would use IP-based services to do everything from deliver a message to a homeowner’s e-mail or mobile phone when 911 is dialed from the home, to gathering the potential victim’s medical records and delivering them first to emergency responders and then to the hospital if necessary.”)).

responsive emergency personnel to better assess and resolve the situation. Likewise, PSAP operators could augment their voice instructions with first aid video instructions appropriate for the specific medical emergency at hand. IP-enabled 911 also holds the promise of “pinpoint[ing] the specific location of the caller in a large building[,] . . . hail[ing] your doctor, and send[ing] a text or Instant Message alert to your spouse.”^{244/}

Another opportunity created by IP-based 911 technology is the removal of data constraints that currently limit PSAPs, most of which use low-speed modems to retrieve ALI data. PSAPs operating in an IP-enabled environment could draw on multiple databases for a variety of useful information, such as medical information for the individual in need or floor plans for the location of the emergency. Although it may be years before these dynamic emergency calling possibilities come to fruition, now is the time for the Commission to establish the kind of regulatory foundation that will enable the emergency calling system to make these future possibilities a reality. In particular, the Commission must act with caution and, where necessary, impose only minimum standards that are currently technologically feasible and necessary to ensure E-911 service for widespread IP-enabled services, without foreclosing future developments. By initially creating only baseline standards (where needed), the Commission will help IP-enabled 911 service realize its full potential and avoid stunting the technological innovations currently taking place.

D. The Commission Should Reaffirm Its Commitment to the Needs of People with Disabilities by Imposing Regulations that Ensure Their Access to IP-Enabled Services that Interconnect with the PSTN.

Access for people with disabilities to communications technology and services is an important public policy, one that Congress has explicitly required the Commission to safeguard.

^{244/} Powell VoIP Written Statement at 12.

Congress has recognized that such access is “essential for participation in nearly all aspects of society,” “a critical tool for employment,” and capable of “bring[ing] independence” to individuals with disabilities.^{245/} Accordingly, it is essential that individuals with disabilities are assured access to IP-enabled services and equipment. This is especially true as such services become increasingly widespread and more central to the nation’s communications. The Commission cannot effectively ensure access to communication for people with disabilities if these individuals are cut off from the next generation of communications technologies and networks that will increasingly be used to connect individuals worldwide. The Commission should assert jurisdiction over the disability access aspects of such services and equipment, and, as we show below, it has clear authority to do so. The Commission should also focus on the substance of these issues now, during the formative stages of this technological revolution when there are the most opportunities for progress, rather than after the fact. In the near term, the Commission should apply its rules implementing sections 255, 251, and 225, and Title I of the Act,^{246/} as appropriate, to those IP-enabled services that interconnect with the PSTN. The Commission should also require providers of these services to contribute to the federal Telecommunications Relay Service fund.

1. IP-Enabled Services and Facilities Have Extraordinary Potential to Provide Truly Effective Access to Communications to People with Disabilities.

Just as the IP platform is revolutionizing other aspects of electronic communication, it holds the potential to do the same for access to communications by people with disabilities. Fundamentally, the IP platform makes it easier for a user to adapt the technology for his or her

^{245/} *Disability Access Order* at 6420-21 ¶¶ 4-6.

^{246/} 47 C.F.R. §§ 6.1-7.23 (addressing obligations of service providers).

individual needs. Unlike traditional circuit-switched networks that use centrally located and inflexible software and technology, the IP-platform's open standards and more distributed and flexible digital software and technology have the potential to facilitate modification and customization to meet individual end users' needs. This customization will enable end users to tailor their individual services to use a mix of voice, text, and video to best meet their needs or the needs of the called party. With this flexibility, IP-enabled services promise to exceed the disability access capabilities of existing communications technologies, which often rely on one-size-fits all, static solutions.

IP-enabled services have already begun to transform one of the foundations of communications access — Telecommunications Relay Services (“TRS”). IP-enabled services have spawned alternative TRS options with greater functionality than those that depend on traditional TTY.^{247/} IP Relay Service, for instance, enables the user to read far more text at once than using a TTY, offers more functionality (allowing the user to print and save transcribed conversations), and is far more portable.^{248/} Video Relay Service (“VRS”), another IP-based TRS recognized by the Commission, uses a broadband Internet connection to provide subscribers with hearing impairments with “live” sign language interpretation for conversations.

The ability to convert information, commands, and messages to voice should become increasingly available using IP technology and equipment, and it may offer substantial benefits

^{247/} TTY is a type of device that uses tones to transmit typed conversations over phone wires at the rate of 45 baud per second. A specially trained operator known as a Communications Assistant (“CA”) acts as an intermediary between the TTY caller and others on the PSTN, facilitating communication by relaying typed messages by voice and converting voice to typed messages.

^{248/} Suzanne Robitaille, *New Telecom Connections for the Deaf*, Business Week Online (Oct. 9, 2002).

to individuals with vision-, speech- and mobility-impairments.^{249/} Indeed, IP-enabled services already are using such capabilities to usher in public safety advances for individuals with disabilities. One industry participant already has created an emergency-broadcast system that simultaneously sends both audio streams and text messages to multiple IP phones, notifying employees with hearing or vision limitations of emergency alerts in accessible formats.^{250/}

2. The Commission Has Authority to Ensure Access to IP-Enabled Services and Facilities for People with Disabilities.

The Commission should play a central role in ensuring that the IP-enabled services market delivers on the substantial promise it already has shown in promoting disability access. To do so, the Commission should affirm its authority to ensure access for people with disabilities to IP-enabled services. The Commission has such authority under the non-carrier-specific provisions of sections 255 and 225 in Title II, and its ancillary jurisdiction under Title I. The Commission's direct authority in this area is grounded in sections 255, 251, and 225 of the Act, which require manufacturers of telecommunications equipment and CPE and providers of telecommunications services to make their products and services accessible to people with disabilities,^{251/} prohibit telecommunications carriers from installing network features, functions, or capabilities that preclude disability access,^{252/} and obligate the Commission to ensure that interstate and intrastate TRS is available to hearing- and speech-impaired individuals.^{253/}

^{249/} Business Week Online, *How VoIP Can Connect the Disabled* (Apr. 28, 2004).

^{250/} *Id.*

^{251/} 47 U.S.C. § 255.

^{252/} *Id.* § 251(a)(2).

^{253/} *Id.* § 225.

As a preliminary matter, these statutory provisions give the Commission express authority to ensure that the *equipment* used for IP-enabled services is accessible to individuals with disabilities. Section 255 applies on its face to manufacturers of telecommunications equipment and CPE.^{254/} The Commission has defined CPE for this purpose to include equipment used for telecommunications, not just telecommunications services.^{255/} The Commission’s current rules, implemented under its express authority under section 255, require manufacturers of the facilities and CPE used for the transmission capability of IP-enabled services (an IP-enabled telephone handset, for example) to “ensure that the equipment is designed, developed, and fabricated to be accessible to and usable by individuals with disabilities.”^{256/}

The Commission may also exercise ancillary jurisdiction under Title I to require information service providers, including IP-enabled service providers, to ensure the accessibility of their services to individuals with disabilities. While the text of sections 255 and 251 apply specifically to “providers of telecommunications services” and “telecommunications carriers,” respectively, the Commission is obligated under section 151 of the Act to ensure nationwide, generally available communications “to all the people of the United States.” This obligation empowers the Commission to ensure that IP-enabled communications are available to subscribers with special needs. As noted above, “Congress sought ‘to endow the Commission with sufficiently elastic powers such that it could readily accommodate dynamic new developments in the field of communications.’”^{257/} The Commission could not “discharge its

^{254/} *Id.* § 255(b).

^{255/} *Disability Access Order* at 6451-53 ¶¶ 81-88.

^{256/} 47 U.S.C. § 255(b); 47 C.F.R. §§ 6.1-7.23.

^{257/} *Computer & Communications Indus. Ass’n*, 693 F.2d at 213.

overall responsibilities”^{258/} to ensure disability access to communications if individuals with disabilities could be cut off from the next generation of communications technologies and networks that will increasingly be used to connect individuals nationwide.

Just as important, the Commission’s broad responsibilities in this area necessarily include the ancillary authority to ensure that individuals with disabilities who remain on the PSTN can communicate with subscribers of IP-enabled services. The value of accessibility to legacy telecommunications would be significantly eroded if an individual with access today could no longer use his or her legacy service to communicate with the growing subscriber base served by IP-enabled services. Indeed, the Commission already has determined that it has ancillary authority to extend section 255’s disability access requirements to information services — and, in fact, did so with respect to voicemail and interactive menu services^{259/} — where doing so is “essential to the ability of persons to effectively use telecommunications.”^{260/}

3. The Commission Should Impose its Current Disability Access Rules on IP-Enabled Services That Interconnect with the PSTN.

The Commission should exercise its ancillary jurisdiction and extend its current rules implementing section 255 to those IP-enabled services that interconnect with the PSTN.^{261/} The Commission’s ancillary jurisdiction is at its apex with respect to such services because they are part of the interconnected communications network over which the Commission has clear authority under Title I of the Act. Further, because these services may replace legacy voice services, Congress’s concern over the accessibility of telecommunications services would

^{258/} *Southwestern Cable*, 392 U.S. at 177

^{259/} *Disability Access Order* at 6455 ¶ 93.

^{260/} *Id.*; see *Midwest Video II*, 440 U.S. at 706-07 (ancillary jurisdiction appropriate to “prevent interference with the Commission’s work”).

^{261/} 47 C.F.R. §§ 6.1-7.23.

reasonably apply to these services. As noted above, the courts have recognized that Congress intended for the Commission to be able to carry out the goals and principles of the Act even in the face of new technologies and services.^{262/}

In extending its section 255 rules to the provision of voicemail and interactive services, the Commission determined that “failure to ensure accessibility of voicemail and interactive menu services, and the related equipment that performs these functions, would seriously undermine the accessibility and usability of telecommunications services required by section 255”^{263/} It determined that extending section 255 obligations to voicemail and interactive menus would “avoid the disruptive effects caused by inaccessible voicemail and interactive menus so as to ensure that the implementation of section 255 is not thwarted.”^{264/}

The same analysis applies to IP-enabled services that interact with the PSTN. Because calls move seamlessly between the PSTN and IP networks, both networks must afford adequate accessibility in order for the explicit accessibility obligations upon telecommunications services to be effective. Limiting any accessibility requirements to IP-enabled services that interconnect with the PSTN is a reasonable approach at this time. Such services are designed to allow IP service users to interact transparently with legacy PSTN end users. People with disabilities who remain on the PSTN should not suffer a degradation in their ability to communicate generally with other end users simply because other users have migrated to new technology and subscribe to services that lack the required functionality. But as the market develops, the Commission should revisit this issue to determine if it can and should take further actions to meet Congress’s

^{262/} See, e.g., *Southwestern Cable*, 392 U.S. at 177.

^{263/} *Disability Access Order* at 6459-60 ¶ 103.

^{264/} *Id.*

accessibility goals. In making this analysis, the Commission should focus on Congress's stated goal of communications services for all. While technology used to deliver communications may change, the needs of consumers with disabilities for access to such communications do not. The Commission also should consider the risks of excluding any services from rules regarding access. Such exclusions run the risk of undermining current levels of access, to the extent traffic migrates to services that have no PSTN connection. In fact, the perceived burden of accessibility requirements on some services and not others could even encourage that migration. Such an outcome would threaten the ability of callers to reach people with disabilities and vice versa.

4. The Commission Should Extend TRS Contribution Requirements to IP-Enabled Service Providers that Interconnect with the PSTN, and Should Affirm Its Prior Decision to Classify Certain IP-Enabled Services as Reimbursable TRS.

As IP-enabled services that interconnect with the PSTN will continue to proliferate and increasingly will be used by TRS users, the Commission should extend TRS contribution requirements to providers of these services. While section 225 provides only that TRS costs must be recovered from “subscribers for every interstate service,”^{265/} without specifying “telecommunications service,” the Commission currently requires TRS contributions only from carriers providing interstate telecommunications services.^{266/} The Commission at minimum, however, has ancillary authority to impose contribution requirements on IP-enabled service providers that interconnect with the PSTN. Requiring providers of these services to contribute will ensure continued support for TRS as traffic migrates from traditional telephony to IP-enabled services.

^{265/} 47 U.S.C. § 225(d)(3)(B).

^{266/} See 47 C.F.R. § 64.604(c)(5)(iii)(A).

The Commission should also continue its current course of monitoring developments in the delivery of TRS and provide funding for IP-based TRS that improve relay services. The Commission has already found that IP Relay and VRS, two IP-based services, qualify as TRS and therefore are eligible for reimbursement from the Interstate TRS Fund.^{267/} That decision will serve to encourage additional innovation that will benefit individuals with disabilities, and such continued innovation is essential to ensuring that the full potential of IP innovations for improved access is realized.

E. The Commission Should Affirm that It Has Authority to Require Universal Service Contributions from IP-Enabled Service Providers and, When and If Appropriate, to Provide Universal Service Support to Such Providers.

As the Commission recognizes,^{268/} the emergence of IP-enabled services as an alternative and complement to conventional circuit-switched telephony presents the Commission with both opportunities and challenges with respect to the existing universal service regime. First, on the contribution side, as traffic migrates from telecommunications services to IP-enabled services, the present telecommunications service revenue base for state and federal universal service contributions could diminish, increasing the burden on existing contributors. As discussed below, the Commission should affirm that it has the legal authority to widen the contribution base to require contributions from any provider of IP-enabled services, and it should exercise that authority at the present time to extend that obligation at least to providers of IP-enabled services that connect to the PSTN. Second, on the disbursement side, the Commission should affirm its authority to provide universal service support for certain IP-enabled information

^{267/} Declaratory Ruling and Second Further Notice of Proposed Rulemaking, *Provision of Improved Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, 17 FCC Rcd 7779, 7792 ¶ 41 (2002).

^{268/} NPRM ¶¶ 63-67.

services at some point in the future if warranted, although the exercise of that authority is not appropriate today. The Commission’s authority over universal service under sections 254 and Title I of the Act give it ample authority to accomplish both objectives.

1. The Commission Has the Authority to Assess Universal Service Contributions on All IP-Enabled Service Providers.

Section 254(d) of the 1996 Act grants the Commission both mandatory and permissive authority to assess universal service contributions on a broad range of communications service providers whose services contain some form of telecommunications component.^{269/} In addition, under Title I of the Act, the Commission has sufficient ancillary authority to assess universal service contributions on those communications services that lack a telecommunications component. Together, these provisions endow the Commission with more than enough authority to require providers of IP-enabled services to contribute to universal service if it deems such contributions necessary and appropriate.

While the Commission’s mandatory authority under section 254(d) extends to “every telecommunications carrier that provides interstate telecommunications services,”^{270/} the Commission’s permissive authority authorizes it to assess contributions from “any other provider of interstate *telecommunications* . . . if the public interest so requires.”^{271/} This permissive authority extends to any IP-enabled service provider that offers IP-enabled service to its

^{269/} As discussed below, that telecommunications component need not be solely in the “last mile” connection to the end user.

^{270/} 47 U.S.C. § 254(d).

^{271/} *Id.* (emphasis added). The Act defines telecommunications as “the transmission, between or among points specified by the user, of information of the user’s choosing, without change in the form or content of the information as sent and received. 47 U.S.C. § 153(43). As the Commission recently held in its *Pulver Declaratory Ruling*, “[u]nder the statute, the heart of ‘telecommunications’ is transmission.” *Pulver Declaratory Ruling* at 3312 ¶ 9.

subscribers with some form of telecommunications, *i.e.*, transmission. As the Commission already has tentatively concluded, an information service provider that “owns or leases the underlying transmission facilities on which its packets are transmitted — *e.g.*, switches or routers — is providing telecommunications”^{272/} and thus falls within the scope of the Commission’s discretionary contribution authority under section 254(d). Indeed, the Commission reached essentially the same result in its *Report to Congress*, concluding that where an information services provider owns or leases transmission facilities in order to provide an information service, it would be “providing telecommunications as a non-common carrier” and “may be required to contribute to the preservation and advancement of universal service if the public interest so requires.”^{273/}

The Commission also has the authority to require universal service contributions from IP-enabled service providers whose services do not contain a discrete telecommunications component — albeit pursuant to its ancillary Title I authority, not its direct section 254 authority. Indeed, the Commission had authority to design and administer a universal service program long before Congress adopted section 254 in the 1996 Act. Title I, as the Commission and the courts have long recognized, authorizes the Commission to “regulat[e] interstate . . . commerce in communication by wire and radio so as to make available, so far as possible, to all people of the United States a rapid, efficient, Nation-wide and world-wide wire and radio communication

^{272/} Notice of Proposed Rulemaking, *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, 17 FCC Rcd 3019, 3033 ¶ 25, 3053 ¶ 76 (2002) (“*Broadband NPRM*”) (tentatively concluding that “in the case where an entity combines transmission over its own facilities with its offering of wireline Internet access service, the classification of that input is telecommunications”).

^{273/} See *Report to Congress* at 11534-35 ¶ 69, 11569-70 ¶ 139; see also *id.* at 11557 ¶ 117 (finding that “other providers of interstate telecommunications” who own or lease facilities to provide telecommunications could be assessed universal service contributions under the Commission’s permissive authority) (citation omitted).

service with adequate facilities at reasonable charges,”^{274/} and thereby establishes a mandate for the Commission to create a universal service program. The D.C. Circuit expressly “recognize[d] the prominence of [section 151’s] universal service objective” among the several statutory objectives of Title I.^{275/} The Commission relied on this authority for over a decade before passage of the 1996 Act to establish universal service funding for basic telephone service in high cost areas, supported by contributions from all long-distance service providers.^{276/}

In creating section 254, Congress acted to formalize and expand the Commission’s Title I universal service authority, not limit it. The statute obligates the Commission to both preserve and advance universal service; it thus acknowledges that such support was already in place prior to enactment of section 254, while providing the Commission with a mandate to take action to further the goals of universal service.^{277/}

Significantly, the Title I sources for this authority, sections 151 and 154(i), are not limited to “telecommunications service providers” or even other providers of

^{274/} 47 U.S.C. § 151.

^{275/} *Nat’l Ass’n of Regulatory Util. Comm’rs v. FCC*, 737 F.2d 1095, 1108 (D.C. Cir. 1984); *Rural Tel. Coalition v. FCC*, 838 F.2d 1307, 1315 (D.C. Cir. 1988) (declaring that “universal service is an important FCC objective” and upholding establishment of Universal Service Fund under section 151); *see also GTE Serv. Corp.*, 474 F.2d at 730-31 (finding that the FCC has authority under 47 U.S.C. §§ 151 and 154(i) to regulate the data processing activities of carriers if those activities pose a “threat to efficient public communications services at reasonable prices”).

^{276/} *See generally* Decision and Order, *Amendment of Part 67 of the Commission’s Rules and Establishment of a Joint Board*, 96 F.C.C.2d 781, 791-802 ¶¶ 21-48 (1984), *aff’d*, *Rural Tel. Coalition*, 838 F.2d at 1315.

^{277/} 47 U.S.C. § 254(b)(5). As noted, nothing in section 254 suggests that it is designed to limit the Commission’s pre-existing Title I authority; therefore, that narrow reading should be disfavored. As the courts have held, “repeals by implication are not favored.” *Morton v. Mancari*, 417 U.S. 535, 550 (1974) (quoting *Posadas v. National City Bank*, 296 U.S. 497 (1936)). The Supreme Court also has made clear that overlapping statutes must be read “to give effect to each if [the court] can do so while preserving their sense and purpose.” *Watt v. Alaska*, 451 U.S. 259, 267 (1981).

“telecommunications.” Instead, the Commission retains broad jurisdiction over any information service provider involved in “interstate and foreign commerce in communication by wire and radio.”^{278/} If the Commission determines that the migration of traffic from the PSTN to new information services is materially affecting the ability to sustain universal service as a whole as well as affecting the costs imposed on existing universal service contributors, it would be well within its ancillary authority to impose contribution obligations on the providers of such information services, in order to prevent “interference” with its ability to accomplish its universal service goals.^{279/}

2. The Commission Should Exercise Its Authority to Require Universal Service Contributions from IP-Enabled Service Providers As Needed to Preserve the Federal Contribution Base.

Having concluded that the Commission has both permissive contribution authority under section 254(d) and ancillary contribution authority under sections 151 and 154(i) to require IP-enabled service providers to contribute to the universal service fund, the next question is whether the public interest requires the exercise of this authority to preserve the federal universal service contribution base. The short answer is that such a decision would clearly serve the public interest, at least with respect to any IP-enabled service that includes the capability to send traffic to or receive traffic from the PSTN.

The Commission announced four principles for exercising its permissive authority in its *Report to Congress*: (1) to establish “a broad contribution base so that the burden on each contributor will be lessened;” (2) to require contributions from carriers that “utilize the PSTN, which is supported by universal service mechanisms;” (3) to minimize, to the extent possible, the

^{278/} 47 U.S.C. § 151.

^{279/} See *Midwest Video II*, 440 U.S. at 706-07.

“competitive disadvantage” suffered by carriers with universal service obligations relative to carriers without such obligations; and (4) to reduce carriers’ incentives to structure their service offerings to circumvent contribution obligations.^{280/} All four of these considerations weigh in favor of assessing contributions on IP-enabled service providers — whether their services include a discrete telecommunications component or not — that connect with the PSTN. First, this policy will ensure the long-term financial health of the universal service fund, even as IP-enabled services become more established. Second, it will ensure that all providers who benefit from the PSTN’s ubiquity will also bear responsibility for supporting that ubiquity. Third, it will prevent IP-enabled service providers from unfairly undercutting the prices of existing telecommunications service providers solely because the latter are subject to the Commission’s mandatory authority and must thus incur a costly contribution burden. Fourth, it will remove any incentive for IP-enabled service providers to attempt to structure their services to avoid universal service contribution obligations.

As noted above with respect to access charges, the Commission already has recognized that those who use and benefit from the PSTN should contribute to its support.^{281/} The Commission previously relied on this same rationale in extending USF contribution requirements to private carriers, finding that, “[w]ithout the benefit of access to the PSTN, which is supported by universal service mechanisms, these providers would be unable to sell their services to others for a fee [T]hese providers, like telecommunications or common carriers, have built their businesses or a part of their businesses on access to the PSTN.”^{282/} IP-enabled service providers

^{280/} *Report to Congress* at 11565-66 ¶¶ 132-35.

^{281/} *AT&T Access Charge Order* ¶ 15.

^{282/} *See Report and Order, Federal-State Joint Board on Universal Service*, 12 FCC Rcd 8776, 9184 ¶ 796 (1997).

that connect with the PSTN to send or receive calls likewise benefit from that legacy network (and impose costs on it); as a result, they should bear some of the burden of supporting that network.

Thus, the Commission has authority to assess contributions from VoIP providers, such as Vonage, that market their products as effective substitutes for (and improvements over) conventional circuit-switched telephony only because they can offer their subscribers full access to the PSTN.^{283/} It would be competitively perverse to give such providers an artificial regulatory advantage by exempting them from the direct universal service obligations to which their circuit-switched rivals are subject.

Similar competitive concerns may require the Commission to include certain other IP-enabled service providers within the scope of the universal service contribution requirement, even in the absence of connection to the PSTN. Specifically, the Commission should use this opportunity to clarify that any universal service contribution requirement should apply equally to providers of wireline broadband Internet access and providers of cable modem service. Although these services both are IP-enabled services, the Commission found the former to be a telecommunications service, and it is thus covered by the Commission's mandatory authority; because it found the latter to be an information service with a telecommunications component, it is covered by the Commission's permissive authority (subject to the final outcome of *Brand X*). But the Commission has the *authority* to require contributions of both. And as SBC has argued

^{283/} Vonage's interconnection with the PSTN contrasts with Pulver's FWD service, which lacks a similar connection with the PSTN. Pulver's service does not allow subscribers to talk to POTS users, and is offered entirely over the Internet. See *Pulver Declaratory Ruling* at 3309 ¶ 5.

elsewhere,^{284/} principles of competitive neutrality require that, unless and until the Commission revisits its determination that wireline broadband is a telecommunications service subject to the mandatory contribution obligation, the Commission must exercise its *permissive* authority to impose contribution requirements on cable modem service. This service competes directly with wireline broadband Internet access, which currently is subject to a sizeable mandatory contribution obligation. This disparity severely slants the competitive playing field for broadband services in favor of cable modem service and creates disincentives to investment for wireline broadband Internet access providers despite Congress’s mandate that the FCC provide for a pro-competitive, deregulatory framework to encourage deployment of advanced telecommunications and information technologies.^{285/}

As the Commission observes, its decision to impose contribution requirements on IP-enabled service providers will have implications for the application of any contribution methodology it chooses in the universal service contribution proceeding.^{286/} But, as the

^{284/} See Comments of SBC Communications Inc., *Broadband NPRM*, at 43-44 (filed May 3, 2002).

^{285/} As SBC explained in its comments in the Commission’s recent section 706 proceeding, for example, SBC expects its advanced services affiliate, Advanced Services Inc. (“ASI”), to contribute more than \$100 million in universal service contributions on DSL service in 2004. These costs, which are not borne by dominant cable modem service providers, often must be passed on to end user customers, creating a substantial and unfair competitive disadvantage for DSL providers. See Comments of SBC Communications Inc., Notice of Inquiry, *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*, GN Docket No. 04-54, at 13-15 (filed May 10, 2004).

^{286/} See, e.g., *NPRM* ¶ 64 (noting that, under “a telephone number-based methodology, VoIP providers that utilize telephone numbers would be subject to assessment” while under a “connections-based methodology, providers of broadband connections used to provide VoIP could be subject to assessment”).

Commission appears to recognize,^{287/} that methodological choice is logically separate from the question of which carriers should bear a contribution obligation, and the Commission must make that latter determination first. This determination should inform the methodology debate rather than await its resolution. If, for example, the Commission decides that IP-enabled service providers that offer service without a telecommunications component should help to support universal service, the contribution methodology should then be tailored to ensure that such providers are in fact assessed.

Finally, the Commission should also consider the impact of its contribution decisions on state universal service programs. As traffic migrates from intrastate services to inherently interstate IP-enabled services, state revenues are likely to decline and federal revenues to increase. To the extent contributions remain revenue-based, this migration, in turn, may put pressure on state authorities to increase per-carrier contribution requirements to make up any shortfall. To head off such potentially destabilizing developments, the Commission should work with states to develop a coordinated response for state and federal contribution mechanisms to address the migration of communications services from the PSTN to IP networks.

3. The Commission Should Acknowledge that, While Universal Service Support for IP-Enabled Services Is Not Appropriate Today, the Commission Has Statutory Authority to Support Such Services in the Future, If and When Appropriate.

As IP-enabled services become sufficiently widespread and begin to replace PSTN-based services, the Commission may someday in the future conclude that public policy favors extending universal service support to such services.^{288/} While that time has not yet arrived and

^{287/} *Id.*

²⁸⁸ It is already settled, however, that the Commission has authority to support information services through the existing section 254 rural health and schools and libraries mechanisms. *See*

may not arrive for many years, if at all, the Commission should use this proceeding as an opportunity to affirm the statutory basis for its authority to extend such support if appropriate.

As the Commission observes, section 254(c) of the Act defines universal service as “an evolving level of telecommunications services,”^{289/} and, as discussed above, IP-enabled services are interstate information services, not telecommunications services. No matter what the contours of that specific Title II mandate, however, the Commission retains its more general Title I authority, described above, “to make available, so far as possible, to all the people of the United States . . . a rapid, efficient, Nation-wide, . . . wire and radio communication service with adequate facilities at reasonable charges”^{290/} Nothing in the text or legislative history of section 254 suggests that Congress intended to limit that authority in any way. Indeed, Congress clearly contemplated, in enacting section 254, that the definition of universal service would evolve to reflect technological innovation, including the growth of information services.^{291/} Thus, even if section 254 does not explicitly *authorize* support for information services, it would be a vast overreading of that provision to read it as *prohibiting* the Commission from providing such support to advance the general mandate of section 151, which, as discussed above, supplied

47 U.S.C. § 254(h)(2)(A); *Texas Office of Pub. Util. Counsel v. FCC*, 183 F.3d 393, 443-44 (5th Cir. 1999) (upholding the Commission’s authority to extend universal service support under schools, libraries and rural health care programs to information services provided by non-telecommunications carriers).

^{289/} NPRM ¶ 65 (citing 47 U.S.C. § 254(c)(1)); *see also* Recommended Decision, *Federal-State Joint Board on Universal Service*, 17 FCC Rcd 14095, 14102-03 ¶ 19 (2002).

^{290/} 47 U.S.C. § 151.

^{291/} *See id.* § 254(c) (defining universal service to “take[] into account advances in telecommunications and information technologies and services”); *id.* § 254(b)(2) (universal service must be based on the principle that “[a]ccess to advanced telecommunications and information services should be provided in all regions of the nation”); S. Rep. No. 103-367, at 33 (1994) (stating an intent “[t]o ensure that the definition of universal service expands over time . . . [and] include[s], at a minimum, the telecommunications and information services that are subscribed to by a substantial majority, not simply a majority, of residential customers”).

the Commission with sufficient authority to maintain a universal service program for more than a decade before Congress enacted section 254 in the 1996 Act.^{292/} Accordingly, although there is no indication that support for IP-enabled services would be appropriate at the present time or in the near future, the Commission's longstanding Title I authority to make affordable communications available nationwide fully empowers it to assert authority to support new technologies at a later date should that become necessary.

F. Industry-Specific Consumer Protection Regulation Is Not Only Undesirable Because It Could Stunt Emerging IP-Enabled Services, But Also Generally Unnecessary Due to Robust Competition for These Services.

In addressing the issue of consumer protection, the Commission must balance the need to ensure that consumer interests are adequately and effectively protected against the goal of avoiding overregulation that could stunt these emerging services. This balance is appropriately struck for these services by relying on generally applicable consumer protections laws, which will apply if the Commission finds these services to be information services. In addition, because of the strong competition in this market, providers have every incentive to be responsive to consumer demands. Thus, while the Commission could employ its Title I ancillary jurisdiction to extend certain communications-specific consumer protection regulations to IP-enabled services,^{293/} it need not and should not do so because consumers are protected by

^{292/} As an additional “belt and suspenders” measure to ensure that it has sufficient authority to support IP-enabled services, the Commission could also exercise its authority under section 10(a) to forbear from the provisions in sections 254(c)(1) and 254(e) that limit universal service support to telecommunications services.

^{293/} See, e.g., Order on Reconsideration, *Promotion of Competitive Networks in Local Telecommunications Markets*, 32 Communications Reg. (P&F) 118 ¶¶ 7-8 (2004); Order, *2000 Biennial Review — Review of Policies and Rules Concerning Unauthorized Changes of Consumers' Long Distance Carriers*, CC Docket No. 00-257 ¶ 9 (rel. May 4, 2004).

generally applicable consumer protection laws, which are effective in all other non-common carrier markets.

Generally applicable consumer protection laws apply to providers of IP-enabled services and protect consumers of such services from unfair or deceptive practices.^{294/} Such laws are designed to prevent deceptive and unfair business, advertising, and billing practices by any business, and to ensure that businesses comply with their privacy commitments and with credit reporting guidelines. Thus, even if the market does not independently constrain such conduct, the existing, generally applicable consumer protection regime provides sufficient security and recourse.

The market for IP-enabled services is characterized by low barriers to entry, and service is already provided today by a variety of entities, including equipment manufacturers, software companies, and other “noncarriers” that specialize in the provision of IP communications. As a result, no provider exercises market power that allows it to impose unfair conditions on consumers against their will. To the contrary, consumers can easily “vote with their feet” if a provider fails to meet their expectations, and choose a provider that offers better and more responsive service.^{295/} A provider that engages in unfair or deceptive practices (such as “cramming”) is likely to swiftly lose customers to its competitors or be charged with fraudulent

^{294/} See, e.g., California Business and Professions Code § 17500 *et. seq.* (establishing civil liability for “untrue or misleading” advertising or marketing activities); see also *Ting v. AT&T*, 319 F.3d 1126 (9th Cir. 2003) (holding that these consumer protections are not preempted by federal law).

^{295/} Of course, consumers’ ability to switch providers depends in part on their ability to port their numbers, as discussed above. This further underscores the need to extend that requirement to providers of IP-enabled services.

business practices.^{296/} As FCC Commissioner Abernathy has explained in the context of Internet services, “the robustly competitive market for ISP services gives providers ample incentive to engage in consumer-friendly practices and punishes providers that fail to do so. . . . [M]ajor ISPs have developed detailed policies for protecting customer privacy, irrespective of government mandates.”^{297/}

For these reasons, the Commission generally should not impose consumer protection rules designed for legacy services, which were not under the jurisdiction of the generally applicable consumer protections laws, on IP-enabled services. For example, special rules to protect customer proprietary network information (“CPNI”), which apply to telecommunications carriers under section 222 of the Act,^{298/} should not be applied to IP-enabled service providers. Such rules have never been deemed necessary for Internet services or application providers, and it is not clear that there is reason for heightened concern with respect to IP-enabled service providers like VoIP providers. While the Commission has *retained* CPNI rules for telecommunications services it deemed competitive, such as wireless and long distance, here the Commission would be reaching out to *impose* these protections on an industry that already has functioned well without them. And the Commission has recognized, even when deciding to retain CPNI protections, that forbearing from CPNI restrictions can result in benefits to consumers and carriers, such as “promot[ing] a free flow of information from the carrier to the

^{296/} See, e.g., *Bill Buck Chevrolet, Inc. v. GTE Florida, Inc.*, 54 F. Supp. 2d 1127 (M.D. Fla. 1999) (customers claimed fraud and RICO violations for alleged fraudulent billing practices and “cramming”).

^{297/} Separate Statement of Commissioner Kathleen Q. Abernathy, *Broadband NPRM* at 3070.

^{298/} See *NPRM* ¶¶ 71.

consumer [and] potentially decreasing the carriers' costs of marketing."^{299/} These considerations are especially important in the market for IP-enabled services where Congress and the Commission have emphasized the need for an unregulatory approach to encourage broader deployment of these developing technologies.

In addition, here the Commission can determine that market forces already have successfully promoted responsible protection of consumer privacy. In response to consumer demand, Internet services and application providers, including SBC, have voluntarily joined industry-wide groups such as the TRUSTe Privacy Partnership to develop standards for protection of consumer privacy and methods to ensure compliance with them. SBC and other like-minded providers, in order to attract customers by promising reliable privacy protections, have their privacy practices reviewed for compliance by TRUSTe. And the Federal Trade Commission ensures that companies stand by their privacy policies and promises.

The "Truth-in-Billing" ("TIB") rules the Commission has adopted pursuant to sections 201 and 258 of the Act likewise are unnecessary. The FCC adopted its TIB rules because common carrier billing practices were specifically excluded from the generally applicable consumer protection statutes.^{300/} This would not be a concern if IP-enabled services are correctly classified as information services; since those services would not be telecommunications services, they would be covered by the generally applicable rules. Similarly, the section 258

^{299/} Order on Reconsideration and Petitions for Forbearance, *Implementation of the Telecommunications Act of 1996: Telecommunications Carriers' Use of Customer Proprietary Network Information and Other Customer Information*, 14 FCC Rcd 14409, 14441-42 ¶ 63 (1999).

^{300/} See First Report and Order and Further Notice of Proposed Rulemaking, *Truth-in-Billing and Billing Format*, 14 FCC Rcd 7492, 7508 ¶ 27 (1999) (citing 15 U.S.C. § 45(a)(2)).

slamming protections need not be imposed on IP-enabled services.^{301/} To the extent it exists in a VoIP environment, slamming likely could be addressed as a fraudulent business practice under general consumer protection statutes.^{302/}

There is one limited exception to this general policy of not imposing communications-specific consumer protection regulations on IP-enabled services. While the Commission should not (and could not) impose section 214 entry and exit rules on IP-enabled service providers because such providers are not “carriers,”^{303/} it might be appropriate for the Commission to require IP-enabled service providers to give some limited form of advance notice of discontinuance of service to their customers.

The market functions least well, if at all, in protecting individual consumers where a business is exiting, because it has no incentives to respond to customer demands. Some regulatory oversight of market exit activity may therefore be appropriate, especially if consumers come to depend on IP-enabled services for their basic communications needs. Such oversight could also be critical to the extent IP-enabled services are used for national defense or public safety purposes. The Commission’s mandate to ensure “adequate facilities” for communications, especially “for the purpose of the national defense” and for “promoting safety of life and property,” provides a clear basis for exercising Title I ancillary authority to impose some form of limited notice requirement before an IP-enabled service provider is permitted to discontinue

^{301/} See NPRM ¶ 72.

^{302/} See, e.g., *Valdes v. Qwest Communications Intern., Inc.*, 147 F. Supp. 2d 116, 122 (D. Conn. 2001) (holding that a class of telephone customers whose service had been switched without their consent could bring a claim under the Connecticut Unfair Trade Practices Act and the common law of fraud).

^{303/} See NPRM ¶ 72.

service.^{304/} These same concerns about accountability and security also may counsel in favor of a limited registration requirement for providers of IP-enabled services, whereby providers would supply basic corporate contact information to the FCC (*e.g.*, name, address, phone, e-mail, and contact person). Such a registration requirement, however, should not be a prerequisite to the initiation of service and must not serve in any way as a barrier to market entry.

SBC remains committed to working with consumer groups and other stakeholders to ensure proper protections for consumer interests including consumer privacy and the prevention of unfair business practices. Given SBC's commitment to these principles, and the competitive environment in which all providers operate in this emerging industry, the Commission should avoid rushing to judgment and increasing the burden of doing business in this emerging industry when no real threat to consumer interests has yet been identified and existing regulation provides adequate safeguards for consumer interests.

^{304/} See 47 U.S.C. § 151.

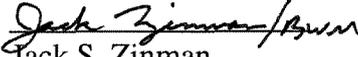
CONCLUSION

By taking the various steps discussed above, the Commission will achieve its stated goal of ensuring the continued unregulation of IP-enabled services, and in the process eliminate regulatory uncertainty and promote the growth and evolution of IP-enabled services generally.

Respectfully submitted,

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world of the past. A small but vocal minority of service providers have similarly proposed foisting those same legacy regulations on incumbent local telephone companies trying to compete in the IP-enabled services market, and have promoted selective deregulation that not surprisingly would provide these providers with a competitive advantage. Finally, the Commission's own siloed regulatory regime — which, more than eight years after passage of the 1996 Act, still imposes disparate and burdensome obligations on providers of IP-enabled services based on their historic regulatory classification as incumbent local telephone companies — is unnecessarily inhibiting full and fair competition in the IP-enabled services marketplace.

If the Commission is to fulfill Congress's directive that this marketplace exist “unfettered by Federal or State regulation,”^{2/} the Commission cannot afford — indeed, this Nation cannot afford — to let the critical questions of the *IP-Enabled Services NPRM* linger unanswered for many months or years into the future. Instead, the Commission must expeditiously establish a competitively neutral, unregulatory framework for IP-enabled services by addressing the following critically time-sensitive issues in an order released by the end of this year, if not sooner:

- *Interstate Jurisdiction.* As virtually all commenters agree, the Commission has the authority to maintain a climate of unregulation through its clear and exclusive jurisdiction over interstate communications, which manifestly include IP-enabled services. This is so, as most commenters recognize, because IP-enabled services almost always provide users with the capability to interact with multiple information sources across the globally dispersed networks and facilities that compose the Internet. They are

^{2/} 47 U.S.C. § 230(b)(2).

therefore categorically interstate communications and fall squarely within the Commission's express Title I jurisdiction over such communications.

- *Information Service Classification.* To preserve the current favorable market conditions for IP-enabled services, the Commission should classify these services as information services. Numerous commenters agree that IP-enabled services should be classified as such and allowed to develop in a largely unregulated environment, outside the scope of Title II common carrier regulations and the other substantive titles of the Act. As SBC has previously explained, IP-enabled services intrinsically offer subscribers enhanced functionality, including the capability for manipulating and storing information, and are correctly viewed as “information services” under the Act. To the extent some small minority of IP-enabled services appear to bear characteristics of telecommunications services, the Commission should forbear from the application of any Title II common carrier regulation to those services.
- *State Preemption.* To ensure that the states do not undermine the Commission's unregulatory approach, the Commission should broadly declare that any state regulation of IP-enabled services that conflicts with federal policy or undermines the congressionally mandated policy of unregulation is preempted. Preemption is proper because there is no practicable way to isolate any intrastate service that the states could regulate, and because state-level common carrier regulation of any component of IP-enabled services would impose undue costs on providers of IP-enabled services and would thus thwart Congress's free-market vision. Most commenters — *including several state regulators* — generally agree that preemption of such regulation is necessary to

ensure that a patchwork of state-level regulation does not distort or chill innovation and competition for IP-enabled services.

- *No Concentration of Market Power.* Some commenters, such as MCI and Z-Tel, perpetuate the unfounded argument that ILECs exercise “market power” at the facilities level of IP-enabled services and therefore the Commission should adopt a layered model of regulation to constrain this putative market power. As an initial matter, it is far from certain that a layered model, which is a network *engineering* abstraction, is an appropriate model for a *regulatory* regime. In any event, even if a layered approach were appropriate, ILECs are not remotely dominant with respect to broadband transmission networks, but instead face robust competition from cable modem providers and the major interexchange carriers. Contrary to the claims of some commenters, SBC has not suggested that this proceeding should affect the Commission’s existing rules about the availability of UNEs to telecommunications carriers, nor would deregulation of all IP-enabled services have any effect on the Commission’s continued regulation of legacy telecommunications services.
- *Commission Authority to Address Public Policy Concerns.* As SBC and many other commenters recognize, classifying IP-enabled services as information services also would not inhibit the Commission from addressing important policy objectives, such as numbering, intercarrier compensation, and public policies such as 911, disability access, and universal service. The Commission has broad authority under Title II over *non-carrier-specific* issues, such as numbering and universal service, for example. And as most commenters also recognize, the Commission has broad Title I ancillary jurisdiction to pursue the general goals of the Communications Act, even as technology changes and

traffic moves from the PSTN to new, IP-enabled services. Few commenters mount any serious opposition to this point; those that attempt to do so advocate a narrow reading of the Commission's authority that is out of step with established Supreme Court and D.C. Circuit precedent.

- *Intercarrier Compensation.* The market for IP-enabled services cannot function efficiently unless the Commission resolves the confusion over the proper application of existing intercarrier compensation rules to those services. Several commenters agree that the industry urgently needs resolution of this issue to restore certainty and stability pending the adoption of a comprehensive, unified intercarrier compensation regime. To that end, the Commission should confirm that its existing rules require the payment of terminating access charges for IP-PSTN traffic and originating access charges for PSTN-IP traffic, and it should further rule that interstate access charges should apply exclusively to all such traffic.
- *Access to Numbering Resources.* The Commission should also immediately correct the distortion in its existing numbering rules by affirmatively establishing VoIP providers' rights to obtain numbers directly from the North American Numbering Plan Administrator ("NANPA") or the Pooling Administrator ("PA"). Granting VoIP providers the same right to acquire numbers as ordinary telecommunications service providers have is consistent with the procompetitive, nondiscriminatory intent of the Commission's numbering rules. As the commenters that address this issue generally agree, this will promote the efficient development of VoIP service offerings. It should also enable the Commission to directly monitor VoIP numbering usage, thereby decreasing the likelihood of number wastage or exhaust.

Other Important Public Policy Issues: 911, Disability Access, Universal Service. Of course, the paramount importance of the preceding issues in no way diminishes the need for the Commission to address other public policy issues, such as emergency calling (911), disability access, and universal service. The Commission should use its authority to design narrowly tailored rules addressing such public policy concerns. For instance, nearly all commenters agree that 911 service should be offered with IP-enabled voice services that interconnect with the PSTN, though commenters also generally urge the Commission to allow the industry to develop voluntary solutions and standards before imposing any regulations or compliance timeframes. Most commenters also agree that Commission regulation is necessary to ensure disability access to IP-enabled services. The Commission should reaffirm its commitment to the needs of people with disabilities by asserting its ancillary authority to ensure that IP-enabled services that interconnect with the PSTN provide the type of access to communications that Congress and the Commission have recognized as being critically important to ensure that individuals with disabilities have equal opportunities at work and in their communities.

With regard to universal service, the majority of commenters agree with SBC's opening comments that the Commission can and should collect universal service fund contributions from VoIP providers that offer service interconnected with the PSTN. The Commission has recognized that those who use and benefit from the PSTN, like IP-enabled services providers who interconnect with that network, should contribute to its support. As traffic migrates to IP-enabled services, collecting universal service contributions from VoIP providers will be essential to preserving the universal service fund base.

Consumer Protection. Finally, although the Commission may have *authority* to employ its Title I ancillary jurisdiction to adopt consumer protection rules for interstate communications

services,^{3/} many commenters concur that specific federal consumer protection regulation of VoIP is premature and unnecessary. The market for IP-enabled services is robustly competitive and, as a result, no provider exercises market power that allows it to impose unfair conditions on consumers. Moreover, generally applicable consumer protection laws would provide ample protection and recourse for consumers. While some commenters advocate imposing many different legacy regulations, none even try to show that there is a pressing (or any) need to do so.

DISCUSSION

In Section I below, SBC addresses arguments concerning the jurisdictional nature of IP-enabled services, as well as the extent of the Commission's authority to preempt state regulation of such services. In Section II, SBC describes the proper regulatory classification for IP-enabled services. In Section III, SBC discusses the sources of the Commission's authority to address specific regulatory concerns that may arise with respect to IP-enabled services, regardless of their classification, and identifies the framework that should guide the Commission's consideration of when such regulation may be appropriate. In Sections IV through IX, SBC discusses the six substantive areas that the Commission and commenters have identified as requiring specific attention: intercarrier compensation, numbering resources, 911, disability access, universal service, and consumer protection.

I. IP-ENABLED SERVICES ARE INDIVISIBLY INTERSTATE SERVICES SUBJECT TO THE COMMISSION'S PREEMPTIVE JURISDICTION.

As SBC explained in its opening comments, the Commission has jurisdiction over all "interstate communications." That category undoubtedly includes IP-enabled services, which

^{3/} See, e.g., Order on Reconsideration, *Promotion of Competitive Networks in Local Telecommunications Markets*, 32 Communications Reg. (P&F) 118 ¶¶ 7-8 (2004); Order, *2000 Biennial Review — Review of Policies and Rules Concerning Unauthorized Changes of Consumers' Long Distance Carriers*, CC Docket No. 00-257 ¶ 9 (rel. May 4, 2004).

enable a user to communicate with other users and information sources across the street, across the country, and across the world. These services are also *indivisibly* interstate because their inherent geographic indeterminacy and portable nature, combined with their capacity to facilitate multiple simultaneous communications with a variety of information sources, make it infeasible to segregate any intrastate component for regulatory purposes. As such, IP-enabled services fall categorically within the Commission’s exclusive jurisdiction, and the Commission should resolve any uncertainty on this point by explicitly preempting any state-level common carrier regulation of information services.^{4/}

A. IP-Enabled Services Are Indivisibly Interstate in Nature.

As an initial matter, no commenter seriously contends that the Commission lacks jurisdiction over IP-enabled services. Rather, the dispute centers on whether state public utility commissions have any basis for asserting jurisdiction over these services. Indeed, the Communications Act gives the Commission broad jurisdiction over “all interstate and foreign communication by wire or radio.”^{5/} IP-enabled services necessarily involve interstate communications because they offer users the ability to communicate with other users and information services dispersed across the Internet.^{6/} As the Commission has explained, Internet

^{4/} SBC Comments at 25-33, 43-47.

^{5/} 47 U.S.C. § 152(a).

^{6/} See, e.g., Order on Remand and Report and Order, *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996; Intercarrier Compensation for ISP-Bound Traffic*, 16 FCC Rcd 9151, 9176 ¶ 54 (2001) (“*ISP Remand Order*”) (noting that the Commission “ha[s] always held [ISP-bound traffic] to be predominantly interstate for jurisdictional purposes), *cert. denied sub nom. Core Communications, Inc. v. FCC*, 123 S. Ct. 1927 (2003); *id.* at 9177-78 ¶ 55 (“[T]he Commission has been consistent in its jurisdictional treatment of ISP-bound traffic.”); Memorandum Opinion and Order, *GTE Telephone Operating Cos.*, 13 FCC Rcd 22466, 22468 ¶ 5 (1998) (“*GTE Order*”) (describing the Internet as “an international network of interconnected computers enabling millions of people to communicate with one another and to access vast amounts of information from around the world”);

communications “interact[] with a global network of connected computers,”^{7/} and thus “involve computers in multiple locations, often across state and national boundaries.”^{8/} The Commission relied on precisely these aspects of Internet-based services when it asserted jurisdiction in 1998 over DSL services,^{9/} and in 1999 and 2001 over dial-up services offered by Internet service providers,^{10/} both of which necessarily involve a fundamental interstate component.^{11/}

There is also broad agreement across the communications industry that IP-enabled services are *indivisibly* interstate and cannot be separated into distinct interstate and intrastate spheres of regulation. Level 3 observes that, “[i]n a rare showing of agreement across the communication industry, a wide array of entities concurs that IP-enabled services are interstate and subject to exclusively federal jurisdiction.”^{12/} This conclusion is shared by Internet backbone providers,^{13/} CLECs,^{14/} ILECs,^{15/} software providers,^{16/} VoIP providers,^{17/} cable providers,^{18/} and wireless providers.^{19/}

Declaratory Ruling and Notice of Proposed Rulemaking, *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities*, 17 FCC Rcd 4798, 4799 ¶ 1 n.1 (2002) (“*Cable Modem Declaratory Ruling*”) (defining “the Internet” as a “global information system”), *rev’d on other grounds sub nom. Brand X Internet Servs. v. FCC*, 345 F.3d 1120 (9th Cir. 2003) (“*Brand X*”).

^{7/} *ISP Remand Order* at 9178 ¶ 58.

^{8/} *Id.* at 9178 ¶ 58 n.115.

^{9/} *GTE Order* at 22483 ¶ 33.

^{10/} *See, e.g., ISP Remand Order* at 9176 ¶ 54.

^{11/} *See* Verizon Comments at 38; Level 3 Comments at 17; Federation for Economically Rational Utility Policy (“FERUP”) Comments at 7-8.

^{12/} Level 3 Comments at 19-20 (collecting comments).

^{13/} *See, e.g.,* Level 3 Comments at 13.

^{14/} *See, e.g.,* AT&T Comments at 45; MCI Comments at 23.

^{15/} *See, e.g.,* BellSouth Comments at 36; Verizon Comments at 37.

^{16/} *See, e.g.,* Microsoft Comments at 14.

This near-unanimity among industry participants is unsurprising. As many commenters point out, the packets carrying the contents of IP-enabled communications cannot feasibly be tracked to determine the transmission's jurisdictional end points;^{20/} the inherent portability of IP-enabled services enables the IP end of a VoIP call to be "anywhere in the world;"^{21/} and IP-enabled services have and will increasingly have the capability to facilitate multiple simultaneous communications with disparate information sources during the course of a single session.^{22/} For the same basic reason that it would be infeasible to carve out an "intrastate" component of IP-enabled services that (like Pulver's VoIP offering) always have *both* ends in an IP network,^{23/} it would also be impracticable to carve out an "intrastate" component of IP-enabled services that, like SBC's HIPCS product or Vonage's VoIP service, can interconnect with the PSTN and thus permit communications with *one* end in an IP network. And, under the "mixed use" and "inseparability" doctrines, it is settled law that the Commission has exclusive

^{17/} See, e.g., Nuvio Comments at 7; PointOne Comments at 8; Net2Phone Comments at 15.

^{18/} See, e.g., National Cable & Telecommunications Association ("NCTA") Comments at 35.

^{19/} See, e.g., Cellular Telecommunications Industry Association ("CTIA") Comments at 2.

^{20/} See, e.g., BellSouth Comments at 33; Verizon Comments at 31; CTIA Comments at 2-3. Indeed, as CTIA explains, IP-enabled services resemble commercial mobile wireless services, which are regulated at the federal level, in their independence of geography. CTIA Comments at 3-4 (citing 47 U.S.C. § 332(c); Second Report and Order, *Implementation of Sections 3(n) and 332 of the Communications Act Regulatory Treatment of Mobile Services*, 9 FCC Rcd 1411 (1994) ("*CMRS Second Report and Order*")).

^{21/} Verizon Comments at 34; see also, e.g., CTIA Comments at 2-3; Net2Phone Comments at 15.

^{22/} See *GTE Order* at 22478-79 ¶ 22 (1998) (footnote omitted); *ISP Remand Order* at 9178 ¶ 58.

^{23/} Memorandum Opinion and Order, *Petition for Declaratory Ruling that pulver.com's Free World Dialup is Neither Telecommunications Nor a Telecommunications Service*, 19 FCC Rcd 3307, 3320-21 ¶ 20 (2004) ("*Pulver Declaratory Ruling*"); see also *id.* at 3322 ¶ 22.

jurisdiction over services that have a significant interstate component from which any intrastate elements cannot be practicably separated.^{24/}

Finally, as BellSouth observes, subjecting IP-enabled services to a scheme of dual federal-state jurisdiction would produce absurd anomalies within the Commission's existing regulatory scheme. IP-enabled services are generally offered over broadband transmission facilities, such as cable modem service or DSL, that are regulated entirely at the federal level.^{25/} As BellSouth notes, "[I]t would be odd indeed to conclude that broadband transmission provided by itself is subject to the Commission's exclusive authority, but that information services provided together with that transmission are not."^{26/} In addition, regulation of IP-enabled services would perversely threaten the broadband infrastructure rollout itself, for it would depress incentives to innovate in VoIP and other IP-enabled "killer applications" that make broadband connection attractive to consumers.

The California commission is simply wrong in claiming that it would be feasible, using current technology, to segregate the "interstate" and "intrastate" components of IP-enabled services.^{27/} As attested to by the equipment and software manufacturers on the cutting edge of

^{24/} See, e.g., *Louisiana Pub. Serv. Comm'n*, 476 U.S. 355, 375 n.4 (1986) (addressing the Commission's jurisdiction "where it was *not* possible to separate the interstate and intrastate components of the asserted FCC regulation"); *Southwestern Bell Tel. Co. v. FCC*, 153 F.3d 523, 543 (8th Cir. 1998) (observing that "the services provided by ISPs may involve both an intrastate and an interstate component and it may be impractical if not impossible to separate the two elements"); *California v. FCC*, 905 F.2d 1217 (9th Cir. 1990); *Illinois Bell Tel. Co. v. FCC*, 883 F.2d 104 (D.C. Cir. 1989); *Public Util. Comm'n of Tex. v. FCC*, 886 F.2d 1325 (D.C. Cir. 1989); *North Carolina Utils. Comm'n v. FCC*, 552 F.2d 1036 (4th Cir. 1977); *North Carolina Utils. Comm'n v. FCC*, 537 F.2d 787 (4th Cir. 1976); see also *Pulver Declaratory Ruling* at 3322 ¶ 22.

^{25/} BellSouth Comments at 35.

^{26/} *Id.* at 36.

^{27/} California PUC Comments at 35-36 (arguing that "source IP" information is correlated with the location where an IP call begins and that various services may tie this information to

this field, there is today no practicable means for identifying geographic locations on the Internet that would enable “intrastate” traffic to be carved out for separate regulation by state commissions.^{28/} In particular, there are a variety of reasons why a packet’s source IP information or IP address cannot currently be used to determine a physical location. First, many providers use dynamic addressing, whereby a different IP address is arbitrarily assigned to each user for each login, making a tracking mechanism virtually impossible. In addition, as the Commission itself noted in the *Pulver Declaratory Ruling*, IP addresses are portable in the sense that a customer can maintain the same address at different locations.^{29/} Thus, even Time Warner Telecom, which claims that location-identifying features may be developed, acknowledges on

geographic locations); *see also* Time Warner Telecom Comments at 41 (arguing that location-identifying features (*e.g.*, for E-911) may enable service providers to differentiate interstate from intrastate traffic); Ohio PUC Comments at 25-26 (suggesting that VoIP “calls placed using NANP numbers over the PSTN can be easily separated into intrastate and interstate”). The California PUC references two companies that purport to “trace” the geographic point of origin of an IP communication. Neither the California PUC nor the companies themselves identify the precise methods used to provide these services, but it appears that the alleged tracing is accomplished using bits and pieces of information gleaned from public databases regarding the location of some portion of an IP-enabled services provider’s network (*e.g.*, a server), not the actual location of the end user, who may be accessing that network from a different state or country. California PUC Comments at 35-36. Notably, the California PUC wisely chooses not to vouch for the accuracy of the tracing information. *See id.* Given the scant data provided and its questionable relevance, these supposed tracing services are hardly a reliable basis for an entire regulatory regime.

^{28/} *See, e.g.*, Nortel Comments at 13-14 n.10 (“[I]t is not currently possible (or feasible) for the network to also track the location of a called party so as to determine where a VoIP call originates and terminates for jurisdictional purposes. Moreover, the same ‘connection’ may be utilized to call multiple parties/locations simultaneously or sequentially. Thus, it is not possible to categorize VoIP calls as ‘interstate’ or ‘intrastate.’”); *see also* Microsoft Comments at 14; Avaya Comments at 18 (“IP-enabled networks, as currently designed, sometimes cannot determine the physical location of a caller.”); BellSouth Comments at 35.

^{29/} *Pulver Declaratory Ruling* at 3320 ¶ 20.

the very same page that “it is currently not possible for VoIP providers to differentiate among these different types of traffic.”^{30/}

That concession underscores a critical point. Even if geographic tracking technology *were* developed at some point in the future, mandating its use simply to determine jurisdictional end points would make a mockery of the Commission’s and Congress’s policy of keeping the Internet unregulated.^{31/} As the Commission recognized in the *Pulver Declaratory Ruling*, “[a]ttempting to require [a service provider] to locate its members for the purpose of adhering to a regulatory analysis that served another network would be forcing changes on this service for the sake of regulation itself, rather than any particular policy purpose.”^{32/} The Commission should likewise reject regulation for the sake of regulation here.

There is also no merit to the nebulous argument of a few states that, even if IP-enabled services cannot be separated accurately into interstate and intrastate components, regulators should concoct allocations or other administrative formulae to divide jurisdiction between federal and state authorities.^{33/} Such “allocations” have historically been used for purposes of ensuring adequate *cost recovery* across both federal and state jurisdictions *after* the lawfulness of dual jurisdiction has already been established.^{34/} IP-enabled services, however, are indivisibly

^{30/} Time Warner Telecom Comments at 41.

^{31/} Such technology would also raise a variety of consumer privacy issues. *See* Voice on the Net (“VON”) Coalition Comments at 21 (stating that in light of the geographic indeterminacy of IP and Internet communications, “[a]ny attempt by the provider to determine the content or jurisdiction of the transmission necessarily raises significant privacy issues that do not exist in the traditional circuit-switched environment”).

^{32/} *Pulver Declaratory Ruling* at 3321 ¶ 21; *see also, e.g.*, PointOne Comments at 9; *cf. Cable Modem Declaratory Ruling*, 17 FCC Rcd at 4825 ¶ 43 (refusing to force carriers to “extract” a telecommunications service from every information service).

^{33/} California PUC Comments at 37-38; NYDPS Comments at 10.

^{34/} *See, e.g., Smith v. Illinois Bell Tel. Co.*, 282 U.S. 133 (1930).

interstate and, as discussed below, the exercise of state jurisdiction over these services would almost always unlawfully negate important federal policy goals.^{35/} Thus, absent a lawful basis for state jurisdiction over IP-enabled services, there can be no “allocation” of jurisdictional authority to state regulators.

In the end, the advocates of dual federal-state jurisdiction (primarily state commissions) fall back on their “quacks like a duck” argument — the notion that because IP-enabled services can be used to provide functionalities that resemble traditional circuit-switched telephony, they should be regulated the same way.^{36/} But, again, this argument misses the point: before the states can regulate a service, they must first establish that they have jurisdiction over it. Contrary to the claims of some commenters, the fact that IP-enabled services and platforms can be used to run *applications* (such as voice or video) that, in some instances, may provide users with the “look and feel” of traditional, jurisdictionally severable telecommunications services does not mean that these IP-enabled services have a separate intrastate component susceptible to state regulation.^{37/}

Moreover, IP-enabled services do not, in fact, quack like a duck; rather, they completely transcend the functionality provided by traditional telephony, and will increasingly do so in the future. As Nuvio explains:

IP-enabled services, and in particular VoIP applications, involve dynamic and ever-changing technologies and service architectures that cannot fit neatly into

^{35/} See *infra* Section I.B.

^{36/} See, e.g., California PUC Comments at 34; see also Wisconsin PSC Comments at 3 (arguing that whether an IP-enabled service is regulated should turn on whether it is “public” or private,” a distinction that should “be determined by how the service presents itself to the user”). These commenters use the same reasoning in support of their efforts to have VoIP classified as a telecommunications service. That argument is discussed *infra* Section II.B.

^{37/} SBC Comments at 35; see also Z-Tel Comments at 13.

pre-defined categories of services that would make only some providers subject to regulation. Because the technology is still in its infancy, the extent of its service applications and features or functionality cannot be adequately determined or anticipated. Many VoIP provide[r]s will offer unique, consumer-driven services that will make categorization based on features or functionality essentially impossible.^{38/}

The comments are replete with illustrations of this enhanced (and evolving) functionality.

For example, AT&T states that “VoIP would allow an architect to discuss drawings with a client and change those drawings simultaneously, in real time, on a single platform.”^{39/}

BellSouth points out that innovations with respect to VoIP are occurring every day, and notes that “[s]ome of the anticipated features and functionality include Web-based customization that enables the user to set special ring tones for different callers, instant line provisioning, customized call-blocking, more advanced unified messaging and message management capabilities, and video-conferencing.”^{40/} Thus, any attempt to recognize a separate sphere of state jurisdiction over IP-enabled services, even if doing so were practicable now, could only be temporary, since the technology underlying these services will inevitably evolve in ways that ultimately eliminate the very basis for that state-level regulatory authority.

^{38/} Nuvio Comments at 4.

^{39/} AT&T Comments at 10.

^{40/} BellSouth Comments at 28; *see also* Written Statement of Jeffrey J. Carlisle Before the Subcommittee on Telecommunications and the Internet, Committee on Energy and Commerce, United States House of Representatives at 2 (July 7, 2004) (“Carlisle Written Statement”) (“VoIP is much more than an alternative way of making a ‘phone call’ — it is an alternative way of doing business. Saying VoIP is just another way to make a phone call is very much like saying that Amazon.com is simply an alternative technology for selling books, without any broader consequences for markets or consumer behavior.”).

B. The Commission Should Preempt Any State Regulation of IP-Enabled Services That Negates the Federal Policy of Unregulation.

As SBC explained in its opening comments,^{41/} the Commission not only should exempt IP-enabled services from common carrier regulation under federal law, but should preempt any state-level counterparts to such regulation as irreconcilable with federal policy in this area. While the Commission must accommodate valid state interests that are *consistent* with federal policy,^{42/} it is specifically empowered to preempt those state regulations that would “negate valid FCC regulatory goals” with respect to inseverably interstate communications.^{43/} Here, precisely because the Commission has exclusive jurisdiction over IP-enabled services for the reasons discussed above, it can and should preempt any state efforts to impose common carrier regulation or, for that matter, any other form of state regulation that would burden the IP-enabled services marketplace.^{44/} Indeed, the *failure* to preempt such state regulations would be directly contrary to Congress’s directive that the Internet and other interactive computer services remain “unfettered by Federal or State regulation.”^{45/} Failure to preempt would also be contrary to Congress’s and the Commission’s express goal of promoting the development of advanced broadband services.^{46/}

^{41/} SBC Comments at 43-47.

^{42/} See *California v. FCC*, 39 F.3d 919, 932 (9th Cir. 1994) (“*California III*”).

^{43/} *Id.* at 931; see also *NARUC v. FCC*, 880 F.2d 422, 429 (D.C. Cir. 1989) (noting that preemption is warranted when state action “negates the exercise by the FCC of its own lawful authority over interstate communication”); *GTE Order* at 22481 ¶ 28; *Pulver Declaratory Ruling* at 3320 ¶ 20.

^{44/} See, e.g., SBC Comments at 43; NCTA Comments at 41; BellSouth Comments at 33; Verizon Comments at 39; Qwest Comments at 31.

^{45/} 47 U.S.C. § 230(b)(2).

^{46/} *Id.* § 157 notes.

As other commenters note, the Commission has already reached essentially that conclusion in the *Pulver Declaratory Ruling*.^{47/} The Commission there recognized that state regulation of Internet-related information services is inconsistent with Congress’s “clear statements about leaving the Internet and interactive computer services free of unnecessary federal and state regulation.”^{48/} That is true across the board for IP-enabled services generally: an appropriate preemption policy is necessary to protect incentives to invest in the development of such services and to honor Congress’s vision of a market unfettered by regulation. A broad cross-section of the industry thus concurs in the need for certainty that service providers will not have to conform their business and engineering plans to a patchwork of conflicting state regulations.^{49/} Indeed, as Verizon argues, preemption will often be necessary to prevent impermissible burdens on interstate commerce,^{50/} as the Commission itself recognized in the *Pulver Declaratory Ruling*.^{51/} Finally, even a number of forward-looking state regulators agree that a uniform deregulatory policy for IP-enabled services is needed to send an “unambiguous signal to the market that the U.S. is receptive to emerging communications technologies.”^{52/}

^{47/} See, e.g., Level 3 Comments at 17-18; MCI Comments at 23-24; NCTA Comments at 33-34.

^{48/} *Pulver Declaratory Ruling* at 3323 ¶ 25.

^{49/} See, e.g., NCTA Comments at 33-41; CTIA Comments at 4; BellSouth Comments at 33-34; Microsoft Comments at 14-16; PointOne Comments at 11; Level 3 Comments at 13.

^{50/} Verizon Comments at 39-40.

^{51/} *Pulver Declaratory Ruling* at 3322 ¶ 23.

^{52/} FERUP Comments at 8; see also Office of the Attorney General of Texas (“Texas AG”) Comments at 14-16 (acknowledging that legacy regulation should not be presumed to apply to IP-enabled services). The Commission also has previously recognized that limiting regulation may stimulate technology. *Pulver Declaratory Ruling* at 3319 ¶ 19 (“We find that granting Pulver’s petition and declaring FWD to be an unregulated information service subject to Commission jurisdiction will facilitate the further development of FWD and Internet applications

Some opponents of preemption point to various statutory provisions and doctrines that, they say, demonstrate a lack of congressional intent to occupy the field of telecommunications regulation to the exclusion of the states.^{53/} These arguments essentially boil down to the unremarkable proposition that the Act preserves state regulatory authority over purely *intrastate* matters.^{54/} No one argues to the contrary. Here, however, it is impossible to separate IP-enabled services into discrete “interstate” and “intrastate” spheres of regulation for the reasons discussed above, and the cited provisions are thus wholly inapposite.

Nor may the states escape preemption by purporting to agree with the Commission that a “light touch” is appropriate for regulating IP-enabled services.^{55/} For example, one commenter

like it and these offerings, in turn, will encourage more consumers to demand broadband service.”).

^{53/} See, e.g., National Association of Regulatory Utility Commissioners (“NARUC”) Comments at 10. Oddly, the Vermont Public Service Board argues that the Commission lacks the authority to preempt state regulation of information services. Vermont PSB Comments at 30-31. This wholly unsupported argument flies in the face of extensive precedent affirming the Commission’s ability to preempt such regulations. See, e.g., *Pulver Declaratory Ruling* at 3320 ¶ 20; Report and Order, *Computer III Remand Proceedings: Bell Operating Company Safeguards and Tier I Local Exchange Company Safeguards*, 6 FCC Rcd 7571, 7632 ¶¶ 122-24 (1991); *Southwestern Bell Tel. Co. v. FCC*, 153 F.3d 523, 544 (8th Cir. 1998); *Vonage Holdings Corp. v. Minnesota Pub. Utils. Comm’n*, 290 F. Supp. 2d 993 (D. Minn. 2003).

^{54/} These arguments take various forms. Some claim that, because parts of the Act expressly provide for exclusive Commission authority, concurrent state authority should be presumed in all other parts. See, e.g., NARUC Comments at 10 (citing §§ 276, 332(c), and 251(e) of the Act). Others argue that the 1996 amendments showed Congress’s intent to preserve state authority. See, e.g., NARUC Comments at 10 (citing §§ 261, 252(e)(3), 253(b), 254(i), 153(41), 601(c)); California PUC Comments at 31; New York Department of Public Service (“NYDPS”) Comments at 6; see also, e.g., California PUC Comments at 33 (noting that the Dormant Commerce Clause does not trump Congress’s reservation of state authority); NYDPS Comments at 7 (arguing that section 230 of the Act should be read narrowly (*i.e.*, to address content regulation)).

^{55/} See, e.g., NYDPS Comments at 3 (“The NYDPS shares the Commission’s concern that unnecessary regulatory requirements may delay deployment of desirable new capabilities and services.”); Vermont PSB Comments at 28 (“State regulation may in fact impose only minimal burdens on IP-Enabled services.”); Virginia State Corporation Commission Staff (“Virginia

argues that the New York Commission’s effort to regulate Vonage is harmless on the theory that Vonage will be free to seek waivers of that commission’s regulations.^{56/} As an initial matter, it is a curious argument that says state regulatory authority must be preserved so that it may be waived. In any event, even a so-called “light touch” may feel quite heavy when cumulatively applied by regulators in 51 different jurisdictions, each with a distinct idea of what constitutes “light.”^{57/} And, as SBC previously explained, the proliferation of so-called light touches has begun. At least 18 states have begun taking positions and issuing decisions regarding the regulatory classification and treatment of specific VoIP services or are actively contemplating whether to do so.^{58/} Absent a strong and decisive declaration of preemption from this Commission, there is little doubt that these efforts will impede the development of IP-enabled services.

Indeed, some states hint in their comments at more aggressive plans for regulation of IP-enabled services. For example, the Wisconsin Commission suggests it must play a role in ensuring “that service providers (broadband and VOIP provider alike) will provide these services

SCC”) Comments at 20 (“States have a strong incentive to work with the FCC to ensure that no unnecessary burdens are placed on emerging new technologies.”); Wisconsin PSC Comments at 6-7 (stating that “regulatory compliance can and often does have a stabilizing effect on new market goods and services” and citing FDA approval in the food and drug industry as an example).

^{56/} CenturyTel Comments at 26.

^{57/} Cf. *Pulver Declaratory Ruling* at 3323 ¶ 25 (“[I]f Pulver were subject to state regulation, it would have to satisfy the requirements of more than 50 state and other jurisdictions with more than 50 different certification, tariffing and other regulatory obligations.”). But to some regulators, this is the answer to the “problem” of IP-enabled services’ mobility. Responding to Vonage’s concern that it cannot know the physical location of its customers, the staff of the Virginia Commission recommends that Vonage submit to the burden of being regulated in every state. Virginia SCC Comments at 14 (“[T]here is no reason that Vonage or other IP-telephony providers could not seek authority to provide intrastate service in all states.”).

^{58/} SBC Comments at 46; *see also, e.g.*, CTIA Comments at 5; Net2Phone Comments at 18; PointOne Comments at 11; VON Coalition Comments at 22-23.

to all Wisconsin consumers interested in obtaining them[.]”^{59/} San Francisco also is admirably candid on this point:

The City recognizes that regulations impose costs on the regulated industry, and those costs may have an impact on the rate of development. . . . The City believes that it is in the interest of all parties to have VoIP services introduced into the market at a measured pace — only when providers are capable of offering service[s] that are sustainable in a regulated environment — than to encourage rapid deployment that puts in jeopardy existing policies and programs that protect the public interest.^{60/}

The fact that state or local policymakers would even contemplate — let alone advocate — sustaining regulatory barriers that slow the deployment of innovative new services to some regulatorily determined “measured pace” should set off alarm bells at the Commission. Such command-and-control dictates for how and when new technology and services should be deployed is anathema to the “vibrant and competitive free market that presently exists for the Internet and other interactive computer services” and is in direct conflict with Congress’s directive that this market remain “unfettered by Federal or State regulation.”^{61/} Indeed, it is precisely because of state efforts to control the development of these services that preemption is so urgently needed.^{62/}

Moreover, concerns that preemption will deny states an appropriate role in protecting their citizens are overblown. For example, consumer protection rules of general application would in most cases not conflict with the Commission’s rules and would not be presumptively

^{59/} Wisconsin PSC Comments at 4-5.

^{60/} City and County of San Francisco Comments at 14.

^{61/} 47 U.S.C. § 230(b)(2).

^{62/} *See, e.g., Pulver Declaratory Ruling* at 3320 ¶ 19 n.70 (“Any state attempt to impose economic or other regulations that treat FWD like a telecommunications service would impermissibly interfere with the Commission’s valid federal interest in encouraging the further development of Internet applications such as these, unfettered by Federal or state regulation, and thus would be preempted.”).

preempted.^{63/} Further, it is hardly the case that preemption would strip the states of *any* role in the regulation of IP-enabled services, as states may participate in Commission proceedings such as this one, and may also provide their recommendations to the Commission through a variety of Federal-State Joint Boards and Joint Conferences. In addition, the states can and in some cases already do participate in industry-wide efforts to develop technological solutions and voluntary standards.^{64/}

Finally, several commenters, including AT&T and NCTA, argue that any preemption decision should be limited to ensure, for example, that states retain authority over interconnection disputes and access to unbundled network elements.^{65/} The preemption contemplated in this proceeding, however, would have no effect on such state authority. The issue here is not preemption of UNE requirements for any telecommunications services or facilities that may underlie IP-enabled services, but preemption of state regulation of IP-enabled services and facilities themselves, such as IP routers. As discussed in the next section, the latter are not subject to sections 251 and 252 to begin with, because they are not used in the provision of a “telecommunications service” and thus do not qualify as “network elements.”^{66/} In all events, preemption of state economic regulation over IP-enabled services will not deprive states

^{63/} SBC Comments at 44.

^{64/} For example, the state of Vermont and a county 911 board in Texas are members of the Alliance for Telecommunication Solutions (“ATIS”), with which the industry is working to develop national 911 standards. See <http://www.atis.org/atismembers.shtml>; see also *infra* Section VI.B (discussing voluntary efforts to develop national 911 standards).

^{65/} See, e.g., AT&T Comments at 44-45; NCTA Comments at 41.

^{66/} In addition, many of these facilities are packetized and are thus not subject to unbundling based on the Commission’s decision’s regarding certain packetized facilities in the *Triennial Review Order*. See Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, 18 FCC Rcd 16978, 17111 ¶ 213 (2003) (“*Triennial Review Order*”), *vacated in part, United States Telecom Ass’n v. FCC*, 359 F.3d 554 (D.C. Cir. 2004)

of any otherwise appropriate role they may derive from section 252 over access to basic telecommunications facilities and services.

II. IP-ENABLED SERVICES MEET THE STATUTORY DEFINITION OF AN INFORMATION SERVICE.

There is widespread agreement that IP-enabled services satisfy the Act's definition of an information service. The vast majority of IP-enabled services offer the capability to generate, transform, store and/or process information in ways not previously possible with circuit-switched services. This inherent capability to control and manipulate information is a core characteristic of an information service under the Act. Moreover, classifying IP-enabled services as information services is not only consistent with the statute, but also with the view, likewise shared by a large number of commenters, that regulation (and particularly economic regulation) of such services would be both burdensome and unnecessary. Indeed, as many commenters recognize, classification of all IP-enabled services as information services will subject them to a presumption of unregulation.

A. IP-Enabled Services Are Properly Classified as Title I Information Services.

A large number of commenters — including ILECs, CLECs, and other providers of IP-enabled services — agree that IP-enabled services should be classified as “information services” under the Act based on the range of capabilities they provide to end users.^{67/} This conclusion directly follows from the statutory definition of “information services” and Commission precedent interpreting that term, including (but by no means limited to) the recent analysis of

^{67/} See, e.g., AT&T Comments at 15-16; BellSouth Comments at 26-28; Comcast Comments at 12; MCI Comments at 21-22; NCTA Comments at 8; Qwest Comments at 14; Vonage Comments at 23.

Pulver’s Free World Dialup (“FWD”) service.^{68/} As many commenters note, almost all IP-enabled services offer the “capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications,” bringing them squarely within the Act’s definition of an information service.^{69/} This will be even more indisputably true as IP-enabled services evolve to include a wider array of enhanced applications.^{70/}

Thus, it should be a straightforward matter for the Commission to conclude that IP-enabled services are properly regulated under Title I of the Act as information services.^{71/} And as commenters further agree, that determination would allow the Commission to establish a presumption against regulating such services, thereby ensuring regulatory certainty and encouraging rather than discouraging investment and innovation.^{72/} Indeed, many commenters credit the Commission’s hands-off policy — adopted over twenty years ago^{73/} and reinforced by

^{68/} *Pulver Declaratory Ruling* at 3313-14 ¶ 11.

^{69/} 47 U.S.C. § 153(20). Additionally, many IP-enabled services involve or include the potential for protocol conversion, although this need not be an *essential* aspect of the inquiry, as SBC noted in its opening comments. *See* SBC Comments at 34 n.77.

^{70/} *See, e.g.,* Qwest Comments at 10-11.

^{71/} Several commenters also endorse SBC’s position in its forbearance petition that, to the extent a particular service does not fall squarely within the “information services” category, the Commission should forbear from regulating it as a Title II telecommunications service. *See, e.g.,* AT&T Comments at 16; Verizon Comments at 29-31; BellSouth Comments at 56-57. SBC further addresses those arguments in its separately filed reply comments in support of that petition.

^{72/} *See, e.g.,* AT&T Comments at 15; MCI Comments at 21; BellSouth Comments at 26; Qwest Comments at 14; Time Warner Telecom Comments at 16.

^{73/} *See, e.g.,* Final Decision, *Amendment of Section 64.702 of the Commission’s Rules and Regulations (Second Computer Inquiry)*, 77 F.C.C.2d 384, 387 ¶ 7 (1980) (“*Computer II*”) (“[T]he absence of traditional public utility regulation of enhanced services offers the greatest potential for efficient utilization and full exploitation of the interstate telecommunications network.”).

Congress in the Telecommunications Act of 1996^{74/} — for the enormous success of the Internet and IP-enabled services thus far.

As SBC explained in its opening comments, the category of “IP-enabled services” should be understood to include only those services that reach or leave the end user’s premises in IP format.^{75/} This bright-line, competitively neutral test therefore is most likely to capture those services that will satisfy the functional definition of an information service. It also offers a high level of certainty to providers and consumers concerning the regulatory obligations that will be associated with these services while remaining sufficiently broad and versatile to accommodate future innovations.

B. Voice-Capable IP-Enabled Services Are Not Telecommunications Services.

Some commenters — primarily, though not exclusively, state regulatory authorities — suggest that VoIP should be singled out from all other IP-enabled services and regulated as a telecommunications service, even if all other IP-enabled services are classified as information services and even if a particular VoIP service comes with enhanced functionalities.^{76/} The general theory underlying this view is that VoIP is the “functional equivalent” of traditional voice telephony, and thus must be regulated in precisely the same way as circuit-switched

^{74/} See, e.g., 47 U.S.C. § 230(b)(2) (declaring that “[i]t is the policy of the United States” 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”).

^{75/} SBC Comments at 21-22. In other words, the communication between the end user and the service provider must be in IP format. Thus, for example, if an end user originates an IP communication on CPE on its premises, and converts that communication to circuit-switched format before it crosses the demarcation to a service provider’s network, the communication would not qualify as an IP-enabled service.

^{76/} See, e.g., Time Warner Telecom Comments at 16; NARUC Comments at 4-5; California PUC Comments at 14; NYDPS Comments at 4-5.

telephone service. Cable companies likewise propose singling out VoIP for special regulatory treatment, though without expressly categorizing it as a telecommunications service.^{77/}

These arguments miscomprehend the analysis employed to classify a particular service and misrepresent the nature of VoIP services generally. While the Commission has focused on the specific functions that a service affords to end users to determine that service's regulatory classification,^{78/} that approach does not mean that any service that offers voice functionality must automatically be considered a telecommunications service. Rather, such a service *cannot* be considered a telecommunications service under the Act and the Commission's precedent if it also offers other, enhanced functionalities. In other words, the service must be seen as a whole, not disassembled and regulated in piece parts. As the Commission has explained, a service's classification "depends rather on the nature of the service being offered to customers. Stated another way, if the user can receive nothing more than pure transmission, the service is a telecommunications service. If the user can receive enhanced functionality, such as manipulation of information and interaction with stored data, the service is an information service."^{79/} Thus, for example, the Commission found that Pulver's VoIP service was an information service, even though it supported voice communications, because it included a variety of "computing capabilities."^{80/} The view that such a service should be considered a

^{77/} See, e.g., NCTA Comments at 9.

^{78/} See, e.g., First Report and Order and Further Notice of Proposed Rulemaking, *Implementation of the Non-Accounting Safeguards of Sections 271 and 272 of the Communications Act of 1934, as Amended*, 11 FCC Rcd 21905, 21976 ¶ 145 (1996); see also Report to Congress, *Federal-State Joint Board on Universal Service*, 13 FCC Rcd 11501, 11530 ¶ 59 (1998) ("Report to Congress").

^{79/} *Report to Congress* at 11530 ¶ 59.

^{80/} *Pulver Declaratory Ruling* at 3313-14 ¶ 11.

telecommunications service because it includes a voice application simply tosses aside the Act and established Commission precedent.

Also, as noted above, IP-enabled services are *not* the functional equivalent of traditional telecommunications services.^{81/} Quite to the contrary, the vast majority of IP-enabled services offer the inherent capability to generate, transform, store and/or process information, and thus qualify as information services under the Act. Attempting to carve out voice-based applications from the universe of IP-enabled services and treating those applications as telecommunications services would actually disserve public policy, particularly where the voice application is integrated with other applications. Forcing providers to offer IP-based voice functionality as a separately regulated component subject to different requirements from those to which other applications that might be part of a single integrated service offering are subject would impose additional costs on providers solely for regulatory purposes, undermining competition and harming consumers.^{82/} As those various functionalities become ever more intertwined, singling out the voice application for specialized regulatory treatment will become less and less feasible. Thus, application of a functional equivalence or substitutability test proposed by some commenters^{83/} will become increasingly awkward, and its results less precise, as these services develop over time. Indeed, to separate the voice and data functions of VoIP would be like separating the audio and video functions of television, and subjecting those functions to different regulatory regimes. Such a result would be unnecessarily cumbersome and would subvert any effort to bring clarity to regulation in the context of IP-enabled services.

^{81/} See *supra* Section I.A.

^{82/} See Verizon Comments at 29; BellSouth Comments at 35.

^{83/} See, e.g., Time Warner Inc. Comments at 13; Level 3 Comments at 36.

III. THE COMMISSION HAS AMPLE AUTHORITY TO APPLY SPECIFIC REGULATIONS TO IP-ENABLED SERVICES WHERE APPROPRIATE, AND IT SHOULD LIMIT SUCH REGULATION, AT LEAST INITIALLY, TO THOSE SERVICES THAT CONNECT WITH THE PSTN.

Classification of IP-enabled services as information services in no way disables the Commission from addressing any of the important public policy concerns that they may implicate. Rather, as many commenters observe, the Commission can impose narrowly tailored regulations on such services pursuant to its Title II non-carrier-specific jurisdiction or its Title I ancillary jurisdiction. Although it has such authority, the Commission need not and should not impose regulations on all IP-enabled services; instead, consistent with an unregulatory or “light-touch” approach, the Commission should differentiate among the various IP-enabled services so that it can identify those that raise relevant concerns and target its regulatory responses accordingly. At least initially, this category should include those services that interconnect with the PSTN. While some commenters suggest alternative criteria or frameworks to guide the Commission’s consideration of when regulation may be warranted, those proposals would either substantially limit the Commission’s flexibility to craft appropriate regulatory solutions or are designed simply to reinforce or even expand legacy regulatory distinctions and obligations that have no place in the regulatory framework for IP-enabled services.

A. The Commission Has Ample Authority to Address Important Public Policy Issues Implicated by IP-Enabled Services Even If They Are Classified as Information Services.

Notwithstanding concerns expressed by some commenters, if the Commission characterizes IP-enabled services as “information services,” as it should, it will retain ample regulatory authority from three sources to meet its policy objectives for those services.^{84/} First,

^{84/} SBC Comments at 52-57.

the Commission’s existing statutory authority over common carrier services will often suffice to address issues relating to an IP-enabled services provider’s use of the PSTN on the non-IP end of particular transmissions. Second, as discussed in SBC’s opening comments, several critical provisions of Title II authorize the Commission to regulate non-common carrier services or functions with respect to such issues as numbering resources, 911 functionality, universal service contributions, and disability access.^{85/} This “non-carrier-specific” Title II jurisdiction enables the Commission to tailor appropriate regulatory requirements for IP-enabled services regardless of how they are classified. Third, the Commission may fill any remaining gaps in the preceding sources of authority by exercising its Title I ancillary jurisdiction. As discussed below, the Commission has long applied that authority to information services, and the contrary suggestions of some commenters are flatly out of step with controlling Commission and judicial precedent.

Many commenters, from all sections of the industry, agree with SBC that the Commission has these multiple tools for crafting appropriate regulations for IP-enabled services once they are classified as “information services.” They note that the Commission’s authority to regulate common carriers may be used to resolve disputes between providers of telecommunications and information services.^{86/} Others recognize that several requirements of Title II may be applied directly to non-common carriers. AT&T and NCTA, for example, affirm that the Act empowers the Commission to address numbering and universal service, even if the regulated entities are information service providers.^{87/}

^{85/} *Id.* at 50-52.

^{86/} Cox Communications Comments at 24 (discussing 47 U.S.C. §§ 201, 202).

^{87/} *See, e.g.*, AT&T Comments at 39 (universal service); NCTA Comments at 28-29 (numbering). Curiously, Sprint suggests that section 254 somehow precludes the extension of universal service obligations to information services. Sprint Comments at 30. But the law clearly provides that “[a]ny other provider of interstate telecommunications may be required to

Likewise, many commenters recognize the Commission’s authority to discharge its statutory duties with regulations that are “reasonably ancillary to the effective performance of the Commission’s various responsibilities.”^{88/} As discussed in SBC’s opening comments, the Commission has built a 40-year body of precedent for exercising its ancillary authority to regulate new services that slip between the cracks of the Act’s substantive Titles to the extent that those services compete with and replace existing services already regulated under one of those Titles or directly affect the Commission’s abilities to serve the Act’s goals. Here, that principle permits the Commission to regulate those aspects of IP-enabled services that may replace and draw traffic from the PSTN.

There can be no serious doubt on that score. In *Computer & Communications Industry Association v. FCC*, the D.C. Circuit specifically affirmed the Commission’s exercise of its ancillary authority over information services to the extent they bear on telecommunications services more generally.^{89/} To the extent that IP-enabled services complement, enhance, and

contribute to the preservation and advancement of universal service if the public interest so requires.” 47 U.S.C. § 254(d). Sprint makes a similar countertextual argument with respect to numbering. Sprint Comments at 30. Here, Sprint fails to acknowledge that section 251(e) grants the Commission authority over the entity designated to “administer telecommunications numbering.” 47 U.S.C. § 251(e)(1); *see also* Cox Communications Comments at 24 n.32 (“The Commission need not invoke Section 4(i) to make numbering resources available. . . . Nothing in Section 251(e) precludes assignments to non-carriers.”). As SBC explained in its opening comments, the Commission need not resort to ancillary jurisdiction to regulate in either area. SBC Comments at 50-52.

^{88/} *United States v. Southwestern Cable Co.*, 392 U.S. 157, 178 (1968). Multiple commenters recognize that this authority gives the Commission flexibility to regulate IP-enabled services as information services. *See, e.g.*, NCTA Comments at 24; BellSouth Comments at 29; Qwest Comments at 37; Cox Communications Comments at 23. Even MCI, which cautions the Commission against an overly broad interpretation of its ancillary authority, agrees that ancillary jurisdiction may be applied to IP-enabled voice applications. MCI Comments at 34-35.

^{89/} *Computer & Communications Indus. Ass’n v. FCC*, 693 F.2d 198, 213 (D.C. Cir. 1982) (“CCIA”) (upholding Commission’s “exercise of ancillary jurisdiction over . . . enhanced services”).

substitute for legacy voice services, they will affect the use, quality, and economic viability of those legacy services. Regulation of those IP-enabled services is thus “reasonably ancillary” to the Commission’s existing Title II authority over telecommunications networks generally, just as, in *Southwestern Cable*, the Commission’s assertion of Title I authority was necessary to address the effect of cable television on the legacy television broadcasting system.^{90/}

Sprint contends, however, that Congress somehow manifested an intent to preclude regulation of information services by drawing an explicit statutory distinction between such services and “telecommunications services” and by specifying that “[a] telecommunications carrier shall be treated as a common carrier under this Act only to the extent that it is engaged in providing telecommunications services.”^{91/} That provision, however, merely insulates a provider from any argument that, by virtue of its characterization as a “telecommunications carrier” in some markets, it is automatically subject to the same set of Title II common carriage regulations whenever it enters other markets not traditionally subject to such regulation.^{92/} But nothing in the statute suggests that Congress meant to preclude the Commission’s long-settled authority to exercise its *Title I* authority to fill the interstices of the Communications Act in response to new types of services.

^{90/} *Southwestern Cable*, 392 U.S. at 177; see also *FCC v. Midwest Video Corp.*, 440 U.S. 689, 706-07 (1979) (“*Midwest Video II*”) (“[In *Southwestern Cable*] regulation was imperative to prevent interference with the Commission’s work in the broadcasting area.”); *GTE Service Corp. v. FCC*, 474 F.2d 724, 734 (2d Cir. 1973) (“[In *Southwestern Cable*] the authority of the FCC . . . was based on the need to control the growth of community antenna systems in order that the Commission might accomplish its broad responsibility of orderly development of an appropriate system of local television broadcasting.”). To say the least, this clear history undermines Sprint’s citation-free warning that ancillary jurisdiction “is sometimes misunderstood (or misconstrued) to permit the assertion of jurisdiction over entities and activities that impinge upon or otherwise affect regulated enterprises or regulatory goals.” Sprint Comments at 29.

^{91/} Sprint Comments at 40 (quoting 47 U.S.C. § 153(44)).

^{92/} Cf. *WorldCom, Inc. v. FCC*, 246 F.3d 690, 694-95 (D.C. Cir. 2001).

There is similarly no merit to Sprint’s use of the “*expressio unius*” canon to argue that the Commission lacks authority to impose particular types of regulations on information service providers when Congress has separately *required* the Commission to impose those types of regulations on telecommunications carriers.^{93/} Congress passed the 1996 Act fully aware of the judicial rulings — *Southwestern Cable*, *CCIA*, and their progeny — affirming the Commission’s broad ancillary jurisdiction.^{94/} Congress has cast no doubt on the continued validity of those precedents and imposed no restrictions on the Commission’s ability to “make such rules and regulations . . . as may be necessary in the execution of its functions.”^{95/} Indeed, the Commission’s ancillary authority would be superfluous if it were read so narrowly as to be available only where Congress explicitly directs the Commission to regulate.

Shortly after the 1996 Act was passed, moreover, the D.C. Circuit rejected an analogous “*expressio unius*” argument in *Mobile Communications Corporation of America v. FCC*.^{96/} The court held that the *expressio unius* “maxim ‘has little force in the administrative setting,’ where we defer to an agency’s interpretation of a statute unless Congress has ‘*directly* spoken to the *precise question at issue*.’”^{97/} Indeed, rote application of the canon would have compelled the Supreme Court to deny the existence of ancillary jurisdiction in *Southwestern Cable* — a result

^{93/} Sprint Comments at 31; *see also* California PUC Comments at 39 (arguing that classification of IP-enabled services as information services would remove the predicate of the Commission’s ancillary jurisdiction authority).

^{94/} SBC Comments at 54-56.

^{95/} 47 U.S.C. § 154(i).

^{96/} *Mobile Communications Corp. of Am. v. FCC*, 77 F.3d 1399 (D.C. Cir. 1996) (upholding Commission’s authority, but remanding in light of the specific manner in which the Commission exercised that authority).

^{97/} *Id.* at 1404-05 (quoting *Texas Rural Legal Aid, Inc. v. Legal Serv. Corp.*, 940 F.2d 685, 694 (D.C. Cir. 1991) (quoting *Chevron U.S.A. v. NRDC*, 467 U.S. 837, 842 (1984))) (emphases added).

the Court clearly rejected. Restrictions of this nature cannot be applied if the Commission is to adapt to an ever-changing technological landscape. Thus, it is not surprising that courts have recognized that “Congress sought ‘to endow the Commission with sufficiently elastic powers such that it could readily accommodate dynamic new developments in the field of communications.’”^{98/}

No contrary conclusion can be drawn from the handful of cases in which the courts have rejected the Commission’s exercise of its ancillary authority. Time Warner Telecom claims that the Supreme Court’s decision in *Midwest Video II* bars the imposition of Title II-style regulations on an information service.^{99/} But that argument completely misreads *Midwest Video II*. In that case, the Court prevented the Commission from imposing common carrier-style regulations on cable providers because Title III of the Act — on which the Commission sought to rely as the source of its ancillary authority — *expressly precluded* the Commission from applying such regulations to broadcasters, and it would have been inappropriate for the agency’s ancillary authority to have exceeded the direct authority from which it derived.^{100/} Time Warner Telecom’s reliance here on *Midwest Video II* would make sense only if the Commission were attempting to impose a type of regulation on IP-enabled services providers that Congress *barred* it from applying to providers of circuit-switched telephony. The Act, however, contains no

^{98/} *Computer & Communications Indus. Ass’n*, 693 F.2d at 213 (quoting *General Tel. Co. v. United States*, 449 F.2d 846, 853 (5th Cir. 1971)).

^{99/} See Time Warner Telecom Comments at 35 (citing *FCC v. Midwest Video Corp.*, 440 U.S. 689 (1979) (“*Midwest Video II*”)).

^{100/} *Midwest Video II*, 440 U.S. at 708-09 (“The Commission may not regulate cable systems as common carriers, just as it may not impose such obligations on television broadcasters.”); see also *NARUC v. FCC*, 533 F.2d 601, 615-17 (D.C. Cir. 1976) (rejecting the Commission’s assertion of its ancillary jurisdiction to preempt state regulation of two-way non-video communications via cable, finding that the operations in question were not ancillary to Commission’s authority over broadcasting).

analogous limitations that would bar the Commission from applying appropriate Title II-style regulations to information services where necessary to discharge its duties.^{101/}

For similar reasons, the D.C. Circuit’s decision in *Motion Picture Association of America v. FCC* has no bearing on the Commission’s ability to regulate information services.^{102/} At issue there was the Commission’s effort to enact “video description” rules that Congress had considered — but decided against — authorizing the Commission to adopt. The court made abundantly clear that its holding was confined to the special concerns raised by FCC regulation of television programming. In particular, it held, “[t]o avoid potential First Amendment issues, the very general provisions of § 1 have not been construed to go so far as to authorize the FCC to regulate program content.”^{103/} Those First Amendment concerns — together with the fact that “[a]fter originally entertaining the possibility of providing the FCC with authority to adopt video description rules, Congress declined to do so”^{104/} — led the court to invalidate the Commission’s rules. No analogous concerns arise here. Any needed exercise of the Commission’s ancillary jurisdiction over IP-enabled services would not involve regulation of “program content.” And Congress has been silent on the scope of the Commission’s Title I jurisdiction over IP-enabled services not because, by analogy to *MPAA*, it considered and rejected statutory endorsement of

^{101/} Microsoft similarly misreads precedent in citing *Southwestern Bell Telephone Co. v. FCC*, 19 F.3d 1475 (D.C. Cir. 1994), as a limitation on the Commission’s authority to use ancillary jurisdiction. Microsoft Comments at 12. In that case, which involved the Commission’s ability to regulate “dark fiber,” the court expressly declined to consider the scope of the Commission’s ancillary authority. *Southwestern Bell*, 19 F.3d at 1484 (“[W]e do not decide today whether the Commission may draw on other authority, *such as its ancillary jurisdiction*, to regulate petitioners’ services.”) (emphasis added).

^{102/} *Motion Picture Association of Am. v. FCC*, 309 F.3d 796 (D.C. Cir. 2002).

^{103/} *Id.* at 805.

^{104/} *Id.* at 806.

such authority, but because it simply did not envision the widespread proliferation of VoIP and similar IP-enabled services when it enacted the 1996 Act.

Finally, Title I is a particularly appropriate source of authority for creating narrowly tailored regulations for IP-enabled services. The Internet owes its remarkable development in part to freedom from intrusive regulation. By restricting regulation to those instances in which it is needed to implement express statutory policies, the Commission can best fulfill Congress's goal of "preserv[ing] the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, unfettered by Federal or State regulation," while retaining the flexibility to act when necessary.^{105/}

B. To the Extent That Some Regulation of IP-Enabled Services is Warranted, the Commission Should Limit That Regulation, at Least Initially, to Those IP-Enabled Services That Interconnect with the PSTN.

While the Commission has the authority to address regulatory concerns for IP-enabled services generally, the unregulatory framework that Congress mandated for such services is best served by a targeted, "regulate only as necessary" approach. Accordingly, the Commission should carefully differentiate among IP-enabled services so that it can identify, and craft regulatory solutions for, only those IP-enabled services that in fact raise particular concerns.

As SBC set forth in its opening comments, as a general matter, the minimum, "gating" criterion (at least for the foreseeable future) that the Commission should use to determine whether a particular IP-enabled service should be subject to regulations that address public policy concerns should be whether that service interconnects with the PSTN.^{106/} Such "interconnected" services are (and are increasingly becoming) part of the seamless and

^{105/} 47 U.S.C. § 230(b)(2).

^{106/} See SBC Comments at 58.

ubiquitous communications network that allows all citizens of this country to communicate with one another (and others across the globe). As such, they are most likely to raise issues similar to those raised by legacy circuit-switched services, which make up the bulk of that communications network today. By contrast, IP-enabled services that are not connected to the PSTN, such as Internet backbone services and Internet access services, have historically been entirely unregulated. And other types of newer, “closed” IP-enabled services that are not designed to meet all of a typical subscriber’s communications needs, but instead allow for communications only among a specific subset of users, similarly should not raise regulatory concerns, at least as a general matter. Subscribers’ expectations with respect to such “closed” services would be very different from those of an end user on the PSTN or a subscriber to a VoIP service connected with the PSTN, both of whom expect to be able to communicate with anyone, for any reason, and in a manner similar to the way they always have communicated over the PSTN.

As SBC previously has explained, PSTN interconnection thus should be a *necessary* criterion for the application of any public policy-based regulations, but it may not be the *only* criterion in all cases. The Commission should adopt additional criteria as necessary to tailor any regulatory requirements narrowly to the services that actually present immediate concerns. For example, as SBC and others discussed in the opening comments, the Commission should adopt “voice capabilities” as an additional criterion for the application of any emergency calling related rules.^{107/} At least today, these are the only services as to which consumers are likely to expect emergency calling capabilities.^{108/} Thus, emergency calling concerns would be low or

^{107/} See *id.* at 95-98; see also Level 3 Comments at 36; BellSouth Comments at 49; Comcast Comments Appendix A at 3-4; Time Warner Inc. Comments at 13.

^{108/} See Report and Order and Second Further Notice of Proposed Rulemaking, *Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling*

nonexistent for a data-only service, even if it were connected to the PSTN. In other cases — for example, the application of any numbering or number portability rules — the use of NANP numbers would be an obvious necessary criterion.^{109/}

Using the PSTN interconnection criterion as an initial cut-off for whether a service might be regulated offers a bright-line, easily implemented test that sidesteps the quagmire that would result from the use of the alternative criteria discussed in the *NPRM* and supported by some commenters.^{110/} For example, functional equivalence or substitutability are overly subjective and could be over- or underinclusive. Whether a particular VoIP service is “functionally equivalent” to or substitutable for traditional voice service, for example, is anything but straightforward. Most VoIP services offer far *more* functionality than traditional voice. But some VoIP services, like Pulver’s, offer voice services that bear some attributes of traditional voice, yet are offered only within a closed network that cannot communicate with PSTN-based customers. Thus, determining whether an IP-enabled service is “equivalent” to or “substitutable” with traditional telephone service will require a highly fact-intensive, case-by-case examination of that service, leading to a parade of declaratory ruling petitions asking the Commission to judge the “equivalence” or “substitutability” of every new service rolled out in the IP marketplace. The

Systems, 18 FCC Rcd 25340, 25347 ¶¶ 18-19 (2003) (“*E911 Scope Order*”) (consumers expect “real-time, two-way voice service” to offer emergency calling, but not other services).

^{109/} See SBC Comments at 90, 92-93.

^{110/} See Notice of Proposed Rulemaking, *IP-Enabled Services*, 19 FCC Rcd 4863 ¶ 29 (2004) (“*IP-Enabled Services NPRM*”); MCI Comments at 36 (suggesting additional criteria of “IP-based voice services that hold themselves out as substitutes for POTS services, [and] that assign NANP numbers to their customers”); BellSouth Comments at 49 (suggesting additional criterion of NANP telephone number); Time Warner Inc. Comments at 13 (suggesting additional criteria of customers’ expectations and competition with traditional CMRS or wireline local exchange service); Level 3 Comments at 36 (suggesting additional criteria of customers’ expectations and competition with traditional telephone service).

PSTN-connectivity test is a far more objective and direct approach that offers much greater certainty to providers and consumers alike.

For similar reasons, the Commission also should not adopt the four-part test proposed by cable companies for identifying which VoIP services should be subject to special regulatory requirements.^{111/} Although the cable company commenters offer that test as a purported alternative to the functional analysis,^{112/} it is still highly subjective in that it calls for, among other things, a determination of whether the service at issue “represents a possible replacement for POTS,”^{113/} which again would require a fact-intensive, case-by-case analysis. This test also runs the risk of being overly narrow, applying only to VoIP services that satisfy four separate criteria.^{114/} Some of those criteria — such as the use of NANP numbers and interconnection with the PSTN — certainly may be relevant to whether specific regulatory obligations should apply to these services, but they are not all equally relevant with respect to all such potential requirements. For instance, certain services that do not use NANP numbers should nonetheless be required to contribute to universal service, as explained below. Similarly, disability access should not be limited only to voice services. The cable companies’ four-part test would unnecessarily limit the Commission’s flexibility to craft appropriate regulations for these services, and the Commission should not straight-jacket itself by adopting it.

^{111/} See, e.g., NCTA Comments at 9 (arguing that a VoIP service should be subject to light regulation if it (1) uses NANP resources, (2) can receive calls from or terminate them to the PSTN at one or both ends of the call, (3) can replace POTS, and (4) uses IP transmission between the service provider and the end user). This test should not be confused with the four-part test described by the Commission for identifying “phone-to-phone” VoIP services that should be regulated as telecommunications services. See *Report to Congress* at 11543-44 ¶ 88.

^{112/} See, e.g., NCTA Comments at 43.

^{113/} *Id.* at 9.

^{114/} See, e.g., *id.*

C. Claims that ILECs Possess Market Power Regarding IP-Enabled Services Are Specious and Provide No Basis for Regulating Such Services.

Although MCI and other commenters support a broad unregulatory approach for their own IP-enabled services, they predictably argue for the continued heavy regulation of the facilities built by their ILEC competitors, including both legacy facilities and any future IP-based facilities developed by ILECs to provide IP-enabled services.^{115/} Many of these commenters also engage in hyperbolic attacks on SBC's proposed definition of IP-enabled services, which, as noted above, includes not only those services that reach or leave an end user in IP format but also the IP-specific facilities over which such services are provided, such as the routers that partially constitute IP platforms.^{116/} These commenters insist that the Commission adopt a "layered" approach to regulating IP-enabled services to restrain the ILECs' alleged market power with respect to the facilities over which IP-enabled services are provided, as well as any others where they allege some providers have market power.^{117/} These arguments should be rejected.

Access to Legacy Facilities. As an initial matter, the classification of IP-enabled services (and the IP-enabled facilities used to provide such services) as largely unregulated, interstate information services will have no effect on access to existing facilities that are *not* IP-specific. To the extent those services and facilities are regulated today, they would continue to be regulated unless and until the Commission concludes that such regulation is no longer necessary. For example, under existing Commission rules, telecommunications carriers would retain access to the local loop as a UNE for the provision of telecommunications services. Such facilities can,

^{115/} See, e.g., AT&T Comments at 48; Level 3 Comments at 28; MCI Comments at 11.

^{116/} See, e.g., AT&T Comments at 52 (stating that "[t]here is no more serious error that the Commission could make" than to adopt SBC's proposed definition of IP-enabled services).

^{117/} See, e.g., MCI Comments at 10; Z-Tel Comments at 5.

in turn, be used to provide IP-enabled services in appropriate circumstances. Likewise, ILECs would remain subject to existing *Computer II* obligations to provide legacy transmission services (*i.e.*, those that are not IP-enabled) for as long as the Commission deems those requirements necessary. Thus, to the extent some commenters have construed SBC's arguments about IP-enabled services and platforms as calling for decreased regulation of legacy services in this context, they are simply mistaken. Indeed, SBC has consistently maintained that "[a] Commission declaration limiting the scope of Title II regulation [for IP-enabled services] . . . would in no way affect existing regulation of legacy networks and services by either state or federal regulators, or predetermine the outcome of pending proceedings relating to legacy broadband services."^{118/}

To the extent CLECs are claiming the right to obtain an ILEC's IP-specific facilities (such as routers) as UNEs, the Act already forecloses that request: such facilities are not "used in the provision of a telecommunications service" and thus do not meet the definition of "network element."^{119/} And even if they were used in the provision of a telecommunications service, those IP-specific facilities would not remotely meet the "impairment" test of section 251(d)(2).^{120/} As the VoIP Fact Report and many rulemaking comments make abundantly clear,

^{118/} Petition of SBC Communications Inc. for a Declaratory Ruling Regarding IP Platform Services, WC Docket No. 04-36, at 50 (filed Feb. 5, 2004).

^{119/} 47 U.S.C. § 153(29). For similar but distinct reasons, information service providers themselves cannot invoke rights to UNEs under section 251(c)(3), since those UNEs must be used for "the provision of a telecommunications service." *Id.* § 251(c)(3). Such providers can, however, partner with telecommunications carriers who provide the underlying transmission input.

^{120/} Indeed, as mentioned above, the Commission has already determined that certain packetized broadband facilities are not subject to unbundling.

the development of IP-based facilities is occurring in a highly competitive environment.^{121/} This is largely due to the low barriers to entry that characterize this market. And, as several commenters also observe, VoIP technology is inexpensive to deploy as well as more efficient than traditional POTS service.^{122/}

IP-Enabled Services. In a classic case of elevating rhetoric over substance, some commenters claim that the Commission should adopt a layered model of regulation to prevent the alleged exercise of “market power” from hindering the development of IP-enabled services. But wholly apart from the flawed market power claims upon which they rest their layered model (discussed below), it is far from certain that a such a layered model is an appropriate paradigm for regulation in the IP environment. As NCTA notes, a layered model “does not, by itself, offer any guidance on whether or how a given layer should be regulated.”^{123/} Moreover, as SBC noted in its opening comments, there is no consensus about how to define the “layers” of Internet-related communications for either regulatory or engineering purposes.^{124/} Indeed, the problems associated with using the layered model as the basis for a regulatory regime continue to inspire much discussion.^{125/} Further, a key step in conducting an accurate market power analysis is to

^{121/} See generally VoIP Fact Report at 2-11 & App. A; AT&T Comments at 17; Verizon Comments at 18; BellSouth Comments at 20-22.

^{122/} See, e.g., Nortel Comments at 15-20; see also Carlisle Written Statement at 3 (“Anyone can attach a server to the Internet to allow two people — or three, four, five or a hundred — to talk to one another, just as anyone can connect a server to the Internet to provide email, file sharing, or any other service.”).

^{123/} NCTA Comments at 43.

^{124/} SBC Comments at 61-62.

^{125/} See, e.g., David P. McClure, President and Chief Executive Officer, U.S. Internet Industry Association, *Feasibility Issues Inherent in the “Layers” Model for Internet Public Policy* at 11 (New Millennium Research Council July 2004) (“There are any number of facets of the ‘Layers Model’ that are problematical to its use as a foundation for Internet public policy.”); see generally New Millennium Research Council, *Free Ride: Deficiencies of the MCI “Layers”*

properly define the relevant market to be studied.^{126/} The layers model proposed by some commenters bypasses this step altogether by *broadly assuming in all instances* that the appropriate “market” to be studied is one of the layers in their model. But by effectively equating the terms “layer” and “market,” this approach completely ignores important criteria (e.g., product, geography, customer class) for properly determining the contours of the relevant market. As the Commission’s analogous experience with the *Triennial Review* proceeding demonstrates, mandating access to facilities without conducting a sufficiently nuanced market analysis is a sure path to reversible error.^{127/} The Commission should decline MCI’s invitation to wander down this same path again.

Moreover, even if the Commission were to conduct a market power analysis along the lines suggested by proponents of the layered model, the Commission would find that, despite some commenters’ suggestions to the contrary, ILECs do not have market power with respect to broadband transmission networks (*i.e.*, the physical layer in the layered model). Cable leads all

Policy Model and the Need For Principles that Encourage Competition in the New IP World (July 2004) (containing numerous essays by telecommunications experts and economists describing the problems with the layered model).

^{126/} See Notice of Proposed Rulemaking, *Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services*, 16 FCC Rcd 22745 (2001); Memorandum Opinion and Order, *Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services*, 17 FCC Rcd 27000 (2002); Memorandum Opinion and Order, *Applications of Ameritech Corp., Transferor, and SBC Communications, Inc. Transferee, for Consent to Transfer Control of Corporations Holding Commission Licenses and Lines Pursuant to Sections 214 and 310(d) of the Communications Act and Parts 5, 22, 24, 25, 63, 90, 95, and 101 of the Commission’s Rules*, 14 FCC Rcd 14712 (1999).

^{127/} Not surprisingly, the most vocal advocates of the layers model are some of the very same companies that urged the Commission to make overbroad findings of “impairment,” which ultimately led the D.C. Circuit to reverse the Commission’s unbundling rules. See MCI Comments at 6-20; AT&T Comments at 15-17; Z-Tel Comments at 14-21.

its intermodal competitors in the mass market for broadband,^{128/} and IXC's such as AT&T and MCI lead all competitors in the enterprise broadband market by an enormous margin.^{129/} Yet numerous commenters do not even acknowledge the existence of these leading providers.^{130/} And while some commenters at least recognize the presence of these providers when they assert that the mass market consists of a "duopoly" consisting of ILECs and cable companies,^{131/} even that statement mischaracterizes reality. There is no duopoly, as other means of providing broadband transmission (such as satellite, wi-fi, 3G wireless, and powerline) are quickly proliferating,^{132/} a point most recently reiterated by Chairman Powell.^{133/} The increased availability of intermodal alternatives reduces any need for regulation at the facilities level, a fact that even proponents of the layered model have been forced to concede.^{134/} In any event, even if there were a duopoly in last-mile access (and there is not), it would be indefensible to impose disproportionately greater regulation on the provider with the much smaller market share. Thus, if anything, the layered model argues in favor of *decreased* regulation of ILECs at the physical layer.

^{128/} See, e.g., VoIP Fact Report at A-1.

^{129/} See, e.g., *id.* at 28, A-19.

^{130/} See, e.g., Z-Tel Comments at 14-21.

^{131/} See AT&T Comments at 49; MCI Comments at 13; Covad Comments at 9.

^{132/} See, e.g., VoIP Fact Report at A-8 to A-19.

^{133/} See Remarks of Michael K. Powell at the University of Tennessee Telehealth Network at 2 (June 30, 2004) ("[B]roadband applications can be delivered over a variety of technology platforms. From wireless, to satellite, to broadband-over-powerline, we are seeing better access technologies develop all the time.").

^{134/} See Richard S. Whitt, *A Horizontal Leap Forward: Formulating A New Public Policy Framework Based On the Network Layers Model* at 45 (MCI Public Policy Paper Mar. 2004) ("Of course, to the extent that competition (such as the increased availability of robust intramodal and intermodal platform alternatives) . . . can fully remove these non-market-based advantages, the need for continuing regulation of these facilities is eliminated as well.").

If the Commission nevertheless harbors any specific concerns about the potential exercise of market power in the IP-enabled services market, the means to address these concerns is to develop and explore the “Net Freedom” principles recently articulated by Chairman Powell^{135/} and the similar “Broadband Connectivity Principles” suggested by the High Tech Broadband Coalition.^{136/} Properly implemented, these principles could ensure that consumers receive the benefits of an open and robustly competitive market for IP-enabled services, while remaining protected from any harms that might result from the unfair exercise of market power by a particular provider. This approach is far preferable to the agenda proposed by MCI, AT&T, and some others, who want the Commission to begin from the presumption that their ILEC competitors’ IP-enabled networks and facilities should be heavily regulated, unless and until the Commission finds otherwise. This presumption of regulation is entirely contrary to the Congressional directive “to preserve the vibrant and competitive free market that presently exists” for Internet-based services.^{137/} Thus, rather than rushing to regulate IP-enabled networks and facilities in the absence of any alleged market power abuses, the Commission should monitor the market carefully with the above-mentioned principles in mind and take appropriate action, if and when a need actually arises. In this manner, the Commission will be able to

^{135/} See generally Remarks of Michael K. Powell, Chairman, Federal Communications Commission, “Preserving Internet Freedom: Guiding Principles for the Industry” (Feb. 8, 2004) (“Net Freedom Remarks”).

^{136/} See High Tech Broadband Coalition Statement of Principles, “Broadband Principles for Consumer Connectivity” (Sept. 25, 2003), available at http://www.nam.org/s_nam/bin.asp?CID=200969&DID=227140&DOC=FILE.PDF.

^{137/} 47 U.S.C. § 230(b)(2).

balance the needs of consumers and providers while maintaining a generally unregulatory framework for IP-enabled services.^{138/}

IV. THE COMMISSION SHOULD PROMPTLY RESOLVE DISAGREEMENTS RELATING TO THE INTERCARRIER COMPENSATION OBLIGATIONS THAT APPLY TO IP-ENABLED SERVICES.

A number of commenters agree that one of the most pressing concerns before the Commission is the need to expeditiously resolve disputes regarding the application of existing intercarrier compensation rules to IP-enabled services.^{139/} As SBC noted in its opening comments, the marketplace for IP-enabled services has become distorted by confusion over the issues,^{140/} and the extent of that confusion is underscored by the widely divergent views expressed by other commenters. Most commenters preface their arguments on this issue by emphasizing the importance of reforming intercarrier compensation generally, and SBC has been supportive of, and a participant in, ongoing industry efforts to reach a consensus for doing so. But in the interim, the Commission should confirm that its existing rules require the payment of access charges for IP-PSTN traffic. Further, the Commission should adopt SBC's proposal to prospectively apply exclusively interstate access charges to such traffic. This solution will allow the Commission to enforce current legal obligations in a workable manner that provides a reasonable transition to the adoption of a unified intercarrier compensation regime generally.

^{138/} See, e.g., Net Freedom Remarks at 6 (“[I]f we secure a reasonable balance between the needs of network providers and internet freedom, consumers will reap the benefits of broadband *without intrusive regulation*, while preserving industry’s incentives to deploy more high-speed broadband platforms.”).

^{139/} See, e.g., AT&T Comments at 16; Level 3 Comments at iv (proposing that the Commission resolve issues relating to intercarrier compensation in “Phase I” of this proceeding).

^{140/} See SBC Comments at 65-66.

A. The Commission Must Enforce Its Existing Access Charges Rules While It Works Toward Broader Intercarrier Compensation Reform.

A number of commenters that note the need for comprehensive solutions to intercarrier compensation problems also endorse the Commission’s initial findings that “any service provider that sends traffic to the PSTN should be subject to similar compensation obligations” and that “the cost of the PSTN should be borne equitably among those that use it in similar ways.”^{141/} Consistent with these guiding principles, a wide range of commenters — including CLECs, cable companies, states, and ILECs — urge the Commission to clarify that its existing rules require providers of IP-enabled services to pay access charges when they use the PSTN to deliver calls to, or pick up calls from, third-parties with whom their own customers communicate (such as a called or calling party on the PSTN who is served by a LEC).^{142/} As SBC and others explained

^{141/} *IP-Enabled Services NPRM* ¶ 33; *see, e.g.*, Association for Local Telecommunications Services (“ALTS”) Comments at 5; Illinois Commerce Commission Comments at 11; Texas AG Comments at 6-7; Sprint Comments at 26-27; BellSouth Comments at 43; Verizon Comments at 43; Comcast Comments at 8 n.14; NCTA Comments at 19; CenturyTel Comments at 12. Nonetheless, this is not the proceeding for consideration of claims by some cable companies that they are entitled to compensation for terminating calls to their VoIP customers on their cable networks. *See* NCTA Comments at 19 (stating that “all network providers should have the same compensation opportunities on an equitable and non-discriminatory basis”); Comcast Comments at 8 n.14 (asserting that if ILECs are compensated for calls that terminate on their networks, “then ILECs should have a corresponding duty to compensate facilities-based VoIP service providers for terminating calls on their networks”). Because cable providers are not currently entitled to collect compensation for calls that terminate on their broadband networks (as opposed to any circuit-switched networks that cable companies may operate), granting this request would require a change in the existing rules that is well beyond the scope of this proceeding. As the Commission has explained, “[t]he access charge system was designed for basic voice telephony provided over a circuit-switched network,” First Report and Order, *Access Charge Reform*, 12 FCC Rcd 15982, 16134 ¶ 347 (1997) (“*Access Charge Reform Order*”); it does not authorize a particular form of compensation for the use of broadband IP networks.

^{142/} *See, e.g.*, Time Warner Telecom Comments at 42; Texas AG Comments at 4; CenturyTel Comments at 14 (“All interexchange traffic is subject to interstate access charges unless and until the Commission replaces access with a new mechanism designed to compensate LECs for the use of their networks.”); Sprint Comments at 26; National Exchange Carrier Association (“NECA”) Comments at 9-13; BellSouth Comments at 43; Verizon Comments at 43; *see also*

in their opening comments, the baseline obligation to pay access charges generally extends to all “users of access service,” which encompasses a range of entities that has always included information service providers such as providers of IP-enabled services.^{143/} If the Commission were to eliminate this long-standing obligation pending the adoption of broader changes to intercarrier compensation, it would merely create (or prolong) opportunities for regulatory arbitrage while threatening the viability of the PSTN.^{144/} Furthermore, contrary to the claims of some commenters that applying access charges in this context somehow results in the Commission “picking winners and losers,”^{145/} this result is competitively neutral, as it ensures that all users of access services are required to pay the appropriate rate for the services they obtain without arbitrarily preferring one type of technology over another.

Predictably, some commenters invoke the “ESP exemption” and incorrectly claim that it insulates all information service providers, including IP-enabled services providers, from ever having to pay access charges, even on the PSTN side of an IP-PSTN call.^{146/} According to these commenters, subjecting providers of IP-enabled services to the baseline access charge obligation would entail either a retraction of the ESP exemption or “an extension” of the existing rules.^{147/}

Wisconsin PSC Comments at 8 (stating that providers of IP-enabled services should be required to pay “[a]ppropriate compensation for use of the PSTN”).

^{143/} See SBC Comments at 68-69 (citing Memorandum Opinion and Order, *Petitions for Reconsideration of MTS and WATS Market Structure*, 97 F.C.C.2d 682, 711-12 ¶ 78 (1983) (“*MTS/WATS Market Structure Order*”).

^{144/} See, e.g., CenturyTel Comments at 15; Sprint Comments at 26.

^{145/} AT&T Comments at 24.

^{146/} See, e.g., AT&T Comments at 27; Level 3 Comments at 4 n.5.

^{147/} See, e.g., AT&T Comments at 27; MCI Comments at 45; Information Technology Association of America (“ITAA”) Comments at 25-26; FERUP Comments at 18.

But as SBC and others explained in their opening comments, information service providers are *not* exempt from the baseline access charge obligation when they use the PSTN for purposes other than to provide information services to their own subscribers.^{148/} This conclusion is supported by the history of the ESP exemption, its focus, and the manner in which it has been described.^{149/} For example, when the Commission first adopted the ESP exemption, it focused exclusively on the information service provider’s use of the local exchange network to have calls delivered between its subscribers and *its* “location in the exchange area.”^{150/} Indeed, as SBC has already noted, this is the only use of the PSTN that the Commission could have had in mind when it first created the access charge regime (and the ESP exemption) in 1983, since the information services that prevailed at that time did not entail the delivery of traffic to or from non-subscribers on the PSTN.^{151/} Rather, subscribers reached their information service provider over the PSTN using the LEC’s access service, and then the information service provider “terminated” the call to a database or computer using an interstate connection (usually provided over an IXC’s interstate facilities), avoiding any LEC’s facilities altogether on the terminating end of the call. And in any event, the call certainly did not continue on or return to a different point on the PSTN again *after* hitting the information service provider’s distant computer or database site.^{152/}

^{148/} See SBC Comments at 70-71; *see also, e.g.*, BellSouth Comments at 44; Verizon Comments at 45-47.

^{149/} See SBC Comments at 70-71.

^{150/} *MTS/WATS Market Structure Order* at 711-12 ¶ 78.

^{151/} See SBC Comments at 70 n.160.

^{152/} See, e.g., Memorandum Opinion and Order, *Northwestern Bell Telephone Company Petition for Declaratory Ruling*, 2 FCC Rcd 5986, 5987 ¶ 2 (1987), *vacated as moot*, Memorandum Opinion and Order, *Northwestern Bell Telephone Company Petition for Declaratory Ruling and WATS Related and Other Amendments of Part 69 of the Commission’s*

In fact, just over a month before filing its comments in this proceeding, AT&T forthrightly admitted that “the Commission has squarely rejected the claim that ‘enhanced services providers’ are categorically exempt from interstate access charges[.]”^{153/} Not surprisingly, AT&T now attempts to distance itself from that admission by claiming that the narrower (and correct) reading of the ESP exemption as explained in detail by SBC and others “rests almost entirely on a stray comment” from a single Commission order.^{154/} But it is AT&T and other opponents of access charges that rely on select quotes from a few Commission orders without any context, to the limited extent that they cite any authority at all.^{155/} For example, AT&T states that “the scope of the ESP exemption” is described in the following statement from the Commission’s 1997 *Access Charge Reform Order*: “In [1983], the Commission decided that, although [ISPs] may use incumbent LEC facilities to originate and terminate interstate calls, ISPs should not be required to pay interstate access charges.”^{156/} But the “use [of] incumbent LEC facilities” referred to in this passage is limited to that described two paragraphs later in the

Rules, 7 FCC Rcd 5644, 5644 ¶ 1 (1992); Notice of Proposed Rulemaking, *Amendments of Part 69 of the Commission’s Rules Relating to Enhanced Service Providers*, 2 FCC Rcd 4305, 4306 ¶ 9 n.27 (1987) (stating that many enhanced services “are provided pursuant to a network configuration in which a call originates over an ‘open’ end and terminates over a ‘closed’ end”); Memorandum Opinion and Order on Reconsideration and Order Inviting Comments, *MTS and WATS Market Structure, Amendment of Part 67 of the Commission’s Rules and Establishment of a Joint Board*, 3 FCC Rcd 4543, 4548 ¶ 39 n.87 (1988) (noting that enhanced service providers “have substantial one-open-end usage”).

^{153/} Letter from D. Lawson, Counsel for AT&T, to M. Dortch, Secretary, FCC, *AT&T’s Petition for Declaratory Ruling That AT&T’s Phone-to-Phone IP Telephony Services are Exempt from Access Charges*, CC Docket No. 02-361, at 3 (Apr. 13, 2004) (emphasis added).

^{154/} AT&T Comments at 27.

^{155/} Indeed, many commenters simply offer conclusory statements that the ESP exemption applies in this context, without any support whatsoever. *See, e.g.*, Qwest Comments at 41-42 (asking the Commission to confirm that, pending intercarrier compensation reform, IP-enabled services providers are covered by “the ‘ESP exemption’ . . . and are not subject to access charges”).

^{156/} AT&T Comments at 27-28 (quoting *Access Charge Reform Order* at 16131-32 ¶ 341).

same *Order*: the use of those facilities “to receive calls from [ISPs’] customers.”^{157/} The use of ILEC facilities for purposes of conventional telephony, such as completing calls initiated by customers of IP-enabled services, does *not* fall within the limited scope of the ESP exemption.

Perhaps realizing the weaknesses in their attempted manipulation of the ESP exemption, some commenters urge the Commission simply to abandon the existing law entirely and carve out new piecemeal exceptions to the current compensation rules for IP-enabled services.^{158/} According to this view, providers of such services should be immediately relieved from any obligation ever to pay access charges, regardless of what the law currently requires.^{159/} As an initial matter, it would be completely irrational to alter existing legal obligations in advance of more comprehensive changes, particularly given that those modifications would be admittedly temporary and would produce competitive asymmetries that favor certain providers. Rather, the Commission should focus on developing methods of enforcing the existing law and thereby preserve prevailing expectations until it reforms intercarrier compensation generally. Otherwise, it would risk creating even more confusion and instability.

In any event, the various justifications cited by these commenters for changing rather than enforcing the existing rules are misconceived. A number of commenters assert that the access charge system has “outlived its usefulness” and “serves only as an anticompetitive source of monopoly profits and price squeezes,”^{160/} and that there is thus “no conceivable public

^{157/} *Access Charge Reform Order* at 16132-33 ¶ 343.

^{158/} *See, e.g.,* AT&T Comments at 22.

^{159/} *See id.* at 23 (“[T]he Commission should, in this proceeding, affirmatively exempt *all* VoIP service from access charges, whether or not they might otherwise be subject to access charges under current rules.”); MCI Comments at 45.

^{160/} AT&T Comments at 22.

interest” for requiring the payment of access charges in this context.^{161/} These claims are just plain wrong: access charge revenues continue to play an important role in ensuring affordable phone service. Indeed, less than three months ago, the Commission rejected similar arguments when it denied a petition in which AT&T sought to be excused from paying access charges on its “IP-in-the-middle” long distance service.^{162/} The Commission pointed out that it is considering comprehensive intercarrier compensation reform in its *Inter-carrier NPRM* and that any issues related to access rate levels or rate structures should be addressed in that proceeding based on the detailed record developed there.^{163/} As many commenters note and as the Commission appears to recognize, exempting certain types of traffic from access charges in the piecemeal fashion suggested by AT&T and others would be affirmatively harmful.^{164/}

Many commenters engage in extensive hand-wringing at the potential consequences of confirming that IP-enabled services are subject to access charges, offering conclusory and hyperbolic assertions that applying the law as it stands will “deal a crippling blow to the development of these services.”^{165/} Such claims, which invoke the policy concerns that prompted the Commission to create the ESP exemption over twenty years ago, are unavailing here. Unlike the enhanced service providers that were the Commission’s focus when it first devised the ESP exemption, the entities providing IP-enabled services today are often large and

^{161/} AT&T Comments at 23.

^{162/} Order, *Petition for Declaratory Ruling that AT&T’s Phone-to-Phone IP Telephony Services are Exempt from Access Charges*, 19 FCC Rcd 7457 ¶ 18 (2004) (“*AT&T Access Charge Order*”).

^{163/} *AT&T Access Charge Order* ¶ 18.

^{164/} See, e.g., CenturyTel Comments at 15; Texas AG Comments at 3-4; NECA Comments at 9.

^{165/} See, e.g., AT&T Comments at 23.

sophisticated businesses that hardly need an industrial policy that gives them artificial regulatory advantages over similarly situated providers. Indeed, as the comments filed thus far reveal, the providers of today's IP-enabled services include major cable operators and other well-established companies. Moreover, interstate access charges are far below what they were when the Commission originally saw the need to create the ESP exemption.^{166/} Commission data show that the interstate access charge per "conversation minute" has decreased from approximately 17 cents in 1984 — the year after the Commission introduced the ESP exemption — to approximately 1.5 cents in 2003.^{167/} This drastic reduction in access rates over time underscores the lack of any need for the ESP exemption in today's market.

B. The Exclusive Application of Interstate Access Charges to IP-Enabled Services Resolves the Concerns Cited By Some Commenters As Reasons Not to Enforce the Commission's Existing Rules.

In its opening comments, SBC explained that because IP-enabled services are indivisibly interstate, it is appropriate to treat them as such for purposes of determining the type of access charges applicable on the PSTN side of an IP communication. That approach for implementing existing intercarrier compensation obligations directly resolves many of the concerns cited by commenters as reasons not to apply access charges at all in this context, while still permitting the Commission to achieve its objective of ensuring that "the cost of the PSTN is borne equitably among those that use it in similar ways."^{168/} As explained in SBC's opening comments, this proposal will allow a reasonable transition to a comprehensive, uniform intercarrier compensation regime, because it will prescribe, for an interim period, roughly the same level of

^{166/} See SBC Comments at 80.

^{167/} Industry Analysis and Technology Division, Wireline Competition Bureau, "Trends in Telephone Service," Table 1.1 at 1-6 (May 2004).

^{168/} *IP-Enabled Services NPRM* ¶ 33.

compensation on the PSTN side of a call that would be due for circuit-switched calls. In addition, while several commenters claim that access charges cannot be assessed on IP-PSTN calls due to an inability to identify the geographic endpoints of such traffic,^{169/} SBC's proposal eliminates any need to develop this capability, since it applies the same rate to all traffic. Finally, applying interstate (and not intrastate) access charges prospectively mitigates the concerns expressed by many commenters concerning above-cost charges, since interstate access rates have been reformed over time to more closely reflect cost.^{170/}

Several commenters agree that the exclusive application of interstate access charges presents a straightforward, practical method of implementing existing intercarrier compensation obligations. For example, Time Warner Telecom observes that it offers “the most promising” interim option for bringing stability to intercarrier compensation in this context pending more general intercarrier compensation reform.^{171/} And NECA suggests that all VoIP traffic should be treated as interstate on a default basis for purposes of intercarrier compensation, given the infeasibility of separating its interstate and intrastate components.^{172/} Such comments are consistent with Commission precedent stating that facilities used for the provision of jurisdictionally interstate services — such as IP-enabled services^{173/} — are properly subject to federal rules.^{174/} This view is also consistent with the need to address the substantial difficulty in

^{169/} See, e.g., AT&T Comments at 24.

^{170/} See SBC Comments at 80.

^{171/} Time Warner Telecom Comments at 42.

^{172/} See NECA Comments at 9-13.

^{173/} See *supra* Section I.A.

^{174/} SBC Comments at 77-78 (citing cases).

applying different compensation rules to IP-enabled services, given their inherently interstate nature.^{175/}

The alternative uniform approach to intercarrier compensation proposed by Level 3 — the application of reciprocal compensation to all IP-PSTN traffic — is fundamentally flawed. First, Level 3’s assertion that reciprocal compensation is the default rule for all traffic is incorrect. While section 251 of the 1996 Act may give the Commission authority to establish reciprocal compensation for all traffic, section 251(g) expressly *preserves* the preexisting access charge regime until or unless changed by the Commission.^{176/} As discussed above, the Commission cannot alter that regime in piece parts without creating competitive inequities and market distortions in the interim.

Level 3’s approach would create precisely such industry dislocations by presuming, in effect, that all traffic on the terminating PSTN end of an IP communication is “local” and is subject to low reciprocal compensation charges, even though the majority of commenters — including Level 3 — correctly observe that IP-enabled services are, in fact, *interstate* services.^{177/} SBC’s approach, by contrast, would preserve the industry status quo, pending a unified regime

^{175/} *Id.* at 78. In the event the Commission decides not to exclusively apply interstate access charges to IP-PSTN calls (or otherwise chooses not to resolve the issue of intercarrier compensation for IP-enabled services in a timely manner), the Commission should, at a minimum, expeditiously affirm that local telephone companies should continue to charge “jurisdictionalized” compensation rates for IP-PSTN traffic (notwithstanding its interstate nature) in accordance with their existing tariffs — at least until the Commission completes its intercarrier compensation proceeding. *See id.* at 81.

^{176/} *See ISP Remand Order* at 9169-70 ¶ 39; 47 U.S.C. § 251(g) (providing that local exchange carriers shall provide exchange access and exchange services for such access “in accordance with the same equal access and nondiscriminatory interconnection restrictions and obligations (*including receipt of compensation*) that appl[ied] to such carrier” before the passage of the 1996 Act) (emphasis added).

^{177/} *See SBC Comments* at 77-78.

for intercarrier compensation generally, by specifying a compensation regime — interstate access charges — that falls in between reciprocal compensation rates and intrastate access charges and could serve as a rough proxy for what PSTN carriers would have received in the absence of VoIP traffic. Indeed, as SBC has explained, this approach may undercompensate those carriers, because today’s VoIP services may often be used disproportionately as a replacement for toll calls rather than non-toll local calls.^{178/}

Level 3 also argues that applying access charges will force changes in network infrastructure, because providers will have to route all traffic to access trunks (since it is generally not possible to charge access when traffic comes over local lines and PRIs).^{179/} The fact that some VoIP providers may, in certain circumstances, need to change the products they purchase to deliver IP-PSTN traffic to the PSTN is simply a consequence of those providers’ unlawful efforts to avoid their access charge obligations under existing Commission rules. It should not now preclude the correct application of those rules and the appropriate intercarrier compensation policy result. The Commission already has flatly rejected the argument that difficulty in complying with applicable rules excuses noncompliance. In *AT&T Corp. v. Bell-Atlantic-Pennsylvania*, AT&T (among other IXC’s) contended that carriers that were overbilling could not defend themselves by pointing to their inability to identify and measure the relevant traffic, arguing that the carriers’ “deliberate choices to disable themselves from properly

^{178/} See *id.* at 79 (citing VoIP Fact Report at 16, 18); see also VoIP Fact Report at 9-10 & C-1 (describing specific VoIP services that offer unlimited free calling); AT&T Comments at 1 (“Current VoIP offerings allow customers that have a broadband connection to place unlimited calls anywhere in the country for a single low price.”).

^{179/} See Level 3 Comments at 5-6.

measuring [the traffic at issue] is no defense.”^{180/} The Commission agreed that obstacles to compliance with its rules do not relieve companies of liability for noncompliance.^{181/} The Commission should likewise conclude that providers of IP-enabled services must comply with existing law and pay access charges for their use of the PSTN to pick up or drop off calls for their customers. SBC’s proposal that interstate access charges be used as the prevailing rate is fully consistent with the Act and provides a workable method for doing so. To the extent additional implementation problems arise, carriers can work together and, if necessary, with the Commission to develop additional means for ensuring enforcement of the existing rules.^{182/}

V. THE COMMISSION SHOULD ADOPT NUMBERING POLICIES THAT PUT IP-ENABLED SERVICES PROVIDERS ON THE SAME COMPETITIVE FOOTING AS TELECOMMUNICATIONS CARRIERS.

As SBC explained in its opening comments, the Commission should amend its rules to permit VoIP providers to obtain direct access to NANP numbers. The existing rules permit only state-certified carriers to acquire numbers directly from the North American Numbering Plan Administrator (“NANPA”) and/or Pooling Administrator (“PA”).^{183/} Since VoIP providers are information service providers and state certification therefore is typically neither viable nor

^{180/} Memorandum Opinion and Order, *AT&T Corp. v. Bell Atlantic-Pennsylvania*, 14 FCC Rcd 556, 596 ¶ 92 (1998) (internal quotation and citation omitted).

^{181/} *See id.* at 596-97 ¶ 93.

^{182/} In addition, the Commission should encourage and facilitate any lawful, market-driven responses that carriers may develop to meet the needs of VoIP providers who wish to interconnect with the PSTN.

^{183/} *See generally* SBC Comments at 82-94; 47 C.F.R. § 52.15(g)(2)(i) (providing that numbering applicants must be “authorized to provide service in the area for which the numbering resources are being requested”); Report and Order and Further Notice of Proposed Rulemaking, *Numbering Resource Optimization*, 15 FCC Rcd 7574, 7615 ¶ 97 (2000) (“*First Numbering Order*”) (interpreting section 52.15(g)(2)(i) of the Commission’s rules as requiring “carriers [to] provide, as part of their applications for initial numbering resources, evidence (*e.g.*, state commission order or state certificate to operate as a carrier) demonstrating that they are licensed and/or certified to provide service in the area in which they seek numbering resource[s].”).

appropriate, the practical effect of the Commission's rules is to prevent VoIP providers from acquiring numbers directly. VoIP providers' inability to acquire numbers directly, in turn, imposes unnecessary and inefficient constraints on their choice of network architecture.

By affirmatively establishing VoIP providers' right to obtain numbers directly from the NANPA and/or PA, the Commission can eliminate these inefficiencies and promote innovation by and competition among VoIP providers. And, as SBC and several other commenters agree, the Commission can serve its numbering policies and guard against number wastage concerns by ensuring that VoIP providers have basic numbering obligations along with the right to direct access to NANP numbers.^{184/} This approach is entirely consistent with the Commission's obligation under section 251(e) of the Act to "make [NANP] numbers available on an equitable basis" and with the Commission's procompetitive, nondiscriminatory philosophy of avoiding numbering policies that, like those at issue here, "unduly favor or disadvantage any particular industry segment or group of consumers" or "unduly favor one technology over another."^{185/}

One commenter suggests that the Commission should also require VoIP providers to furnish directory publishers with Subscriber Line Information ("SLI"). To the extent VoIP customers wish to have their numbers listed in directories and directory publishers actually have difficulty obtaining SLI from VoIP providers (and it is not clear that they will), the Commission should consider establishing a requirement that VoIP providers who make SLI available must do so in a nondiscriminatory fashion. In addition, the Commission should reject the call for technology-specific area codes for VoIP, just as it did in the wireless context.

^{184/} *Id.*; NCTA Comments at 21; Comcast Comments Appendix A at 2; Cisco Comments at 10; Sprint Comments at 20.

^{185/} Public Notice, *FCC Establishes North American Numbering Council Advisory Committee*, 11 FCC Rcd 22367, 22368 (1996).

Finally, allowing VoIP providers to utilize numbers should not create any unique numbering exhaust problems in most circumstances and may even reduce the pace of net number consumption. Nonetheless, to guard against any potential number exhaust problems that could arise, the Commission should explore number exhaust issues through its *Numbering Resource* docket, the forum best suited to considering this question in a comprehensive fashion.^{186/}

A. The Commission Should Authorize Direct Assignment of NANP Numbers to IP-Enabled Services Providers.

As SBC showed in its opening comments, and as Sprint likewise notes, the current numbering arrangement, in which certificated carriers provide numbers to VoIP providers, is “artificial,” “economically inefficient,” and cannot be directly overseen by the Commission.^{187/} As SBC explained, limiting VoIP providers to indirect number access can produce inefficient network architectures.^{188/} The Commission’s longstanding philosophy has been that numbers

^{186/} Order, *Administration of the North American Numbering Plan*, CC Docket No. 99-200, DA 04-1721 (rel. June 17, 2004).

^{187/} Sprint Comments at 20; *see generally* SBC Comments at 84-89.

^{188/} Indeed, the Commission recently granted SBC IP Communications, Inc. (“SBC-IP”) Special Temporary Authority (“STA”) to acquire a limited quantity of NANP numbers in order “to experiment with a more efficient means of communication between IP networks and the PSTN.” Order, *Administration of the North American Numbering Plan*, CC Docket No. 99-200, DA 04-1721, at 2 (rel. June 17, 2004). SBC-IP expects favorable results from that trial and, in all likelihood, will be prepared to deploy commercial VoIP services well before the Commission acts in the present proceeding. Accordingly, SBC-IP has also requested a limited waiver of the Commission’s rule that only state certificated carriers may acquire NANP numbers directly, to be effective until the Commission adopts final numbering rules regarding IP-enabled services in this proceeding. *In re SBC IP Communications, Inc. Petition for Limited Waiver of Section 52.15(g)(2)(i) of the Commission’s Rules Regarding Access to Numbering Resources*, Petition for Limited Waiver (filed July 7, 2004) (“*Waiver Petition*”). Granting SBC-IP’s requested waiver — like granting the STA — will not prejudice the outcome of the present proceeding, *see id.* at 10-11; by the same token, however, it is no substitute for remedying the inefficient and unnecessary constraints that the current rules impose on VoIP providers generally.

should be accessible to all *bona fide* service providers in a competitively neutral manner.^{189/} Yet the current arrangement discourages even VoIP providers that are ready and willing to provide service immediately from obtaining direct access to numbers, because, even though they are information service providers, Commission rules force them to submit to state common carrier regulation as a prerequisite for obtaining numbering resources.

Most commenters that address the issue of numbering resources are in full agreement that VoIP providers should be able to acquire NANP numbers directly. NCTA and Comcast, for example, argue that VoIP providers should have the “right to obtain telephone numbers, including numbers secured through number portability, [and] to assign those numbers to VoIP customers.”^{190/} Cisco and Sprint similarly endorse the principle that VoIP providers should have “full access to [NANP] numbers”^{191/} and “should enjoy the same [numbering resource] rights accorded other providers using different technologies.”^{192/}

BellSouth expresses concern, however, that direct use of numbers by VoIP providers could accelerate telephone number exhaust.^{193/} BellSouth accordingly proposes that the

^{189/} *First Numbering Order* at 7615 ¶ 99 (Commission “d[id] not intend to circumscribe any carrier’s ability to obtain initial numbering resources in order to initiate service[;]” its rule requiring state certification was designed only “to prevent actual or potential abuses of the number allocation process;” and it, “[i]n fact, . . . expect[ed] the establishment of these requirements to make more numbering resources available to carriers lawfully authorized by state commissions to provide local service by preventing unauthorized carriers from unlawfully depleting numbering resources.”); 47 C.F.R. § 52.9(a) (numbering protocols must “[n]ot unduly favor or disfavor any particular telecommunications industry segment or group of telecommunications customers; and . . . [n]ot unduly favor one telecommunications technology over another.”).

^{190/} NCTA Comments at 21; Comcast Comments Appendix A at 2.

^{191/} Cisco Comments at 10.

^{192/} Sprint Comments at 20.

^{193/} BellSouth Comments at 53-54.

Commission retain the status quo with respect to numbering access, pending an investigation by the North American Numbering Council (“NANC”) or the Industry Numbering Council (“INC”),^{194/} into the effect of direct acquisition of NANP numbers by VoIP providers on number exhaustion.^{195/}

In general, numbering exhaust is a legitimate public policy concern, and the Commission is studying the question closely, as it should. But the Commission need not be concerned that granting VoIP providers direct access to numbers implicates any unique numbering exhaust concerns. Whether a VoIP provider utilizes numbers directly or indirectly would not change the total *quantity* of numbers used. In fact, direct access may decrease the chance of number wastage or exhaust, because it would allow the Commission to directly monitor VoIP providers’ use of numbers. Moreover, as SBC explained in its opening comments, the fact that the current rules bar most VoIP providers from directly acquiring numbers appears to be entirely unintentional and came about because the Commission did not have VoIP in mind when it drafted the current rules.^{196/} There accordingly is no need for additional study before amending the letter of the current rules to conform with their spirit. Additional delay in allowing VoIP providers to acquire NANP numbers directly will only continue to prevent those providers from fully realizing the potential of IP-enabled services, and stifle the growth of a nascent industry, without any compensating benefit. Exhaust concerns can be included in the Commission’s

^{194/} See generally 47 C.F.R. §§ 52.11, 52.12(c) (explaining advisory roles of NANC and INC).

^{195/} BellSouth Comments at 53. BellSouth is not, of course, suggesting that VoIP providers be prohibited from using numbers at all; to the contrary, BellSouth specifically notes that VoIP providers may, for now, “obtain NANP resources either by becoming certificated as a carrier, or by partnering with a certificated carrier.” *Id.* at 54.

^{196/} SBC Comments at 87.

ongoing general examination of that issue, but should not delay crafting numbering rules that make sense for VoIP providers.

B. VoIP Providers Should Be Subject to Basic Numbering Obligations When They Use Numbers, But Should Not Be Subject to Special SLI Obligations or Be Required to Use a VoIP-Specific Area Code.

As SBC explained, VoIP providers should be subject to basic obligations when they use numbers, including number usage reporting, pooling, and cost support; VoIP providers also should be fully subject to number portability requirements.^{197/} Other commenters, such as Comcast, the NCTA, and Cisco, agree that VoIP providers should have roughly the same “critical rights . . . [and] critical responsibilities” regarding numbering as ordinary telecommunications carriers.^{198/} The Commission has ample authority to impose these requirements as a condition of allowing VoIP providers to use numbers given its overarching authority over numbering and because the use of numbers by VoIP providers will affect the availability and use of numbers by all communications providers.^{199/}

A few commenters suggest that the Commission adopt specific, restrictive rules in connection with VoIP providers’ use of numbers. For example, the Yellow Pages Integrated Media Association (“YPIMA”) urges the Commission to promulgate a rule requiring VoIP providers to provide SLI — the names and numbers of its customers — to companies that compile telephone directories.^{200/} Such a rule is not necessary. SBC believes that most VoIP customers who use telephone numbers will want their numbers to be included in directories and

^{197/} *Id.* at 89-94.

^{198/} Comcast Comments at 7-11; NCTA Comments at 21; Cisco Comments at 10.

^{199/} 47 U.S.C. § 251(e)(1) (granting the Commission “exclusive jurisdiction” over numbering resources); *Southwestern Cable*, 392 U.S. at 178.

^{200/} Yellow Pages Integrated Media Association (“YPIMA”) Comments at 1-4.

that the market will respond, with providers making the necessary commercial arrangements with directory publishers. However, to the extent the Commission finds it necessary to intervene in this area in the future, it could consider a requirement that, when VoIP providers make SLI available to directory publishers, they do so on a nondiscriminatory basis. But before the Commission takes any action, it should look to the VoIP market to determine if a problem truly exists.

Finally, BT America argues for the creation of non-geographic numbering ranges — a “VoIP area code” or something similar — in order to give customers certainty about who they are calling.^{201/} However, the Commission has noted its “extreme[] reluctan[ce] to consider permanent technology-specific [area codes]”^{202/} and has specifically recognized in the wireless context that technology-specific numbering ranges are inappropriate because they are competitively non-neutral.^{203/} The same principles apply here. For example, a VoIP-specific area code would effectively eliminate inter-modal local number portability, since changing from a PSTN-based number to a VoIP-specific number (or vice versa) would necessarily require incoming callers to dial a different area code. Similarly, a single non-geographic VoIP-specific area code might reach number exhaust more quickly than the existing PSTN area code or codes in any given geographic region. Moreover, PSTN-based consumers might be quite confused about whether calls to or from VoIP-specific area code numbers would incur toll charges at the retail level, especially since current retail PSTN-based billing arrangements typically impose

^{201/} BT America Comments at 5-6.

^{202/} Third Report and Order, *Numbering Resource Optimization*, 17 FCC Rcd 252, 285 ¶ 74 (2001) (“*Third Numbering Order*”).

^{203/} Declaratory Ruling and Order, *Proposed 708 Relief Plan and 630 Numbering Plan Area Code by Ameritech-Illinois*, 10 FCC Rcd 4596, 4607-12 ¶¶ 25-29, 33-35 (1996).

such charges for calls to different area codes. This confusion could make consumers reluctant to dial VoIP-based numbers, which could in turn lead some consumers to avoid subscribing to VoIP services. For these reasons, the Commission should reject any policy that would entail VoIP-specific telephone numbers.

VI. EMERGENCY CALLING IS AN IMPORTANT PUBLIC POLICY THAT THE COMMISSION SHOULD ADDRESS FOR IP-ENABLED SERVICES.

The comments reflect considerable consensus on the appropriate Commission approach to 911/E-911 for IP-enabled services. In general, commenters across the board agree that providers of IP-enabled voice services that interconnect with the PSTN should provide 911 capabilities, and that the Commission has the authority to impose that requirement, regardless of how IP-enabled services are classified.^{204/} At the same time, almost all of these commenters urge the Commission to allow the industry to develop its own standards and implement voluntary solutions before the Commission imposes any regulations or sets compliance timeframes.^{205/} “In short, the Commission should require access to 911 and E-911 for IP-enabled voice services” that interconnect with the PSTN, “but it must recognize that a transition [to establish and

^{204/} See BellSouth Comments at 49-50 (“The Commission can and should require [certain] IP-enabled service providers . . . to fulfill 911 emergency call processing requirements”); FERUP Comments at 14 (“The provision of functionally equivalent E911 service should not be left solely to the market to address.”); Verizon Comments at 51 (“The Commission should require all providers of VoIP services to have the capability of allowing their subscribers to reach emergency personnel by dialing 911.”); AT&T Comments at 32 (same); Comcast Comments Appendix A at 4 (same).

^{205/} See AT&T Comments at 32-33 (“[T]he Commission should acknowledge that industry coalitions are working diligently to find an industrywide solution”); Vonage Comments at 38 (“[T]he Commission should allow the VoIP industry the opportunity to develop industry standards to effectuate 911/E911 service.”); Verizon Comments at 51 (“[T]he Commission should refrain from requiring VoIP providers immediately to provide access to enhanced 911 (‘E911’) services until the industry has had an opportunity to develop standards and solutions for VoIP E911 functionality.”); BellSouth Comments at 50 (same); FERUP Comments at 14 (same).

implement standards] will be necessary.”^{206/} As the Commission itself has recognized, “development and deployment of [IP-enabled] services is in its early stages, [] these services *are* fast-changing and likely to evolve in ways that we cannot anticipate, and [] imposition of regulatory mandates, particularly those that impose technical mandates, should be undertaken with caution.”^{207/} By spearheading industry efforts to develop nationwide standards and solutions, and refraining from imposing 911 service obligations on IP-enabled services providers prior to the development of those standards, the Commission will strike the appropriate balance between “the potential public benefits of requiring emergency calling and other public safety capabilities” and “the risk that regulation could slow technical and market development”^{208/}

A. The Commission Should Address IP-Enabled 911 Services Only for Those IP-Enabled Services Offering Voice Capability and Interconnecting With the PSTN.

As SBC made clear in SBC’s opening comments, it is important as a preliminary matter to establish which types of IP-enabled services should be subject to 911 requirements. Sections 151 and 251(e)(3),^{209/} combined with the Commission’s general authority to make rules and regulations as necessary to fulfill its duties under the Act, empower the Commission “to determine whether the public interest require[s] that a provider of a particular service should be required to provide 911/E911 to its customers”^{210/} And as the Commission already has

^{206/} Avaya Comments at 22.

^{207/} *IP-Enabled Services NPRM* ¶ 53 (emphasis added).

^{208/} *Id.*

^{209/} 47 U.S.C. § 151 (giving the Commission the general authority to make communications available on a national basis “for the purpose of promoting safety of life and property through the use of wire and radio communication”); *id.* § 154(i) (authorizing and requiring the Commission to make rules and regulations as necessary to fulfill its duties under the Act).

^{210/} *IP-Enabled Services NPRM* ¶ 53 n.162 (citing *E911 Scope Order* at 25345-46 ¶¶ 13-15).

recognized in a different context, there may be no compelling public interest in requiring 911 capabilities from all services or in all circumstances.^{211/} SBC and many other commenters noted that 911 obligations are appropriate only for those IP-enabled services that interconnect with the PSTN and offer voice capabilities.^{212/} This is so both because subscribers are most likely to expect 911 capabilities from such services, and because the Commission’s ancillary jurisdiction is at its apex with respect to services such as these that end users will utilize in place of or at least in conjunction with traditional telecommunications services.^{213/}

Nonetheless, a few commenters that advocate the applicability of 911 obligations to all IP-enabled voice services appear to overlook the important distinction between voice services that interconnect with the PSTN and those that function only within a closed network,^{214/} and one

^{211/} See Report and Order and Further Notice of Proposed Rulemaking, *Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, 11 FCC Rcd 18676, 18716-18 ¶¶ 81-83 (1996) (declining to impose 911 obligations on certain specialized mobile radio providers and mobile satellite system providers).

^{212/} See MCI Comments at 36 (stating that IP-enabled services that, inter alia, “are interconnected with the public switched telephone network . . . properly are subject to the Commission’s ancillary jurisdiction”); Level 3 Comments at 36 (“[T]he Commission should require emergency service access for communications services that . . . offer real-time, two-way voice service that is interconnected to the PSTN”); BellSouth Comments at 49 (“An IP-enabled information service that . . . includes a voice capability component and . . . originates or terminates or both originates and terminates calls on the PSTN . . . should comply with E911 requirements”); Comcast Comments Appendix A at 3-4 (“A VoIP service provider . . . [that, inter alia,] receives calls from — and terminates them to — the PSTN . . . [should have] the obligation to provide consumers access to 911/E911 capabilities.”); Time Warner Inc. Comments at 13 (stating that VoIP services that, inter alia, “offer[] ‘real-time, two-way switched voice service’ interconnected with the PSTN” should be “subject to 911 requirements”).

^{213/} See SBC Comments at 98.

^{214/} See AT&T Comments at 29 (noting that “public safety capabilities are an important and beneficial part of the communications system, and IP-enabled voice services ultimately should include them”); United States Telecom Association (“USTA”) Comments at 39 (“All providers of voice communications must comply with 911/E911 capabilities.”); AARP Comments at 2 (“AARP strongly urges the FCC to ensure that VoIP service packages include enhanced 911

commenter goes so far as to suggest that “if a device or service could be used for communication of emergencies, it should be required” to do so.^{215/} But as the Commission previously has found in a different context, the distinction between services interconnected with the PSTN and those that are not is significant, and 911 obligations should not apply to the latter.^{216/} Such “closed” services do not, and are not designed to, meet all of a typical subscriber’s communications needs. Accordingly, subscribers who opt for such services recognize that they are “off” the country’s primary, interconnected communications network. Subscribers’ expectations with respect to such “closed” and defined services would be very different from those of an end user on the PSTN or a subscriber to a VoIP service connected with the PSTN, both of whom expect to be able to communicate with anyone else on the PSTN, for any reason. As the Commission has explicitly recognized, such expectations are a critical factor in determining whether 911 obligations should apply.^{217/} The public policy issues — if any — associated with such “closed” services, and the Commission’s interest in regulating them (and its authority to do so), generally would be extremely limited.

On the other hand, the Commission also should reject suggestions by some commenters to further narrow the category of IP-enabled services that should provide 911 services by larding down the bright-line test SBC proposes with additional criteria. Some commenters, for example,

(E911 services.”). Verizon also makes reference to applying 911 obligations to “all VoIP providers.” Verizon Comments at 51.

^{215/} National Emergency Number Association (“NENA”) Comments at 5.

^{216/} See *E911 Scope Order* at 25347 ¶ 18 (discussing appropriate criteria for determining whether services should be subject to E-911 obligations, including whether the service “offers real-time, two-way voice service that is *interconnected to the public switched network*”) (emphasis added).

^{217/} See *id.* (discussing appropriate criteria for determining whether services should be subject to E-911 obligations, including whether customers “have a reasonable expectation of access to 911 or E911 services”).

suggest that 911 obligations should attach only to those IP-enabled services that “hold themselves out as substitutes for POTS,”^{218/} those that use NANP numbers,^{219/} those from which consumers expect 911 service,^{220/} or those that “compet[e] with traditional . . . telephone services.”^{221/} These criteria unnecessarily narrow the scope of covered services. As noted, IP-enabled services that interconnect with the PSTN and offer voice capability are part of the primary communications infrastructure and, accordingly, are those from which consumers would expect and should receive 911 services.^{222/} Further, tests that rely on subjective criteria, such as substitutability, would not only be difficult for the Commission to implement, but would create uncertainty for providers and consumers concerning the applicability of any 911 obligations.

B. The Commission Need Not and Should Not Exercise Its Authority to Require IP-Enabled 911 at This Time But Instead Should Lead Industry Efforts to Create Nationwide Standards.

While the Commission has clear authority to require providers of IP-enabled services that interconnect with the PSTN and provide voice capabilities to offer 911 services, that is a separate matter from whether the Commission should, at this time, impose such obligations. As SBC explained and most other commenters similarly state, the Commission instead should support the

^{218/} See MCI Comments at 36 (suggesting additional criteria of “IP-based voice services that hold themselves out as substitutes for POTS services, [and] that assign NANP numbers to their customers”).

^{219/} See BellSouth Comments at 49 (suggesting additional criterion of NANP telephone number); See MCI Comments at 36 (same).

^{220/} See Time Warner Inc. Comments at 13 (suggesting additional criterion of customers' expectations); Level 3 Comments at 36 (same).

^{221/} Level 3 Comments at 36 (suggesting additional criterion of competition with traditional telephone services); see also BellSouth Comments at 49 (suggesting additional criterion of substitutability for traditional voice communications); Time Warner Inc. Comments at 13 (suggesting additional criterion of competition with traditional CMRS or wireline local exchange service).

^{222/} See SBC Comments at 98.

ongoing voluntary industry efforts to develop 911 solutions and standards.^{223/} As SBC stated in its opening comments, and as other commenters widely recognize, the VoIP industry is working diligently with organizations such as Alliance for Telecommunication Solutions (“ATIS”), the Emergency Services Interconnection Forum (“ESIF”), and the National Emergency Number Association (“NENA”) to ensure the development of national standards.^{224/} These voluntary efforts promise to produce a response that reflects the best thinking across the industry and that has buy-in from all players. As Vonage states, “Allowing the VoIP industry additional time to develop emergency access standards will eventually lead to a robust VoIP 911/E-911 system that will likely contain additional features” beyond those available from legacy voice services.^{225/}

Furthermore, immediate implementation of 911 regulations for IP-enabled services is unnecessary. To the extent technically feasible today, many VoIP providers already offer 911 services for IP-enabled voice services that interconnect with the PSTN.^{226/} While such services are not identical to PSTN-based 911, providers are actively seeking to meet their customers’ emergency services needs. Further, it is not possible to craft sensible rules today, without taking the relevant but dynamic technological constraints and opportunities into account. It would, for example, make no sense to reflexively impose the 911 rules for legacy PSTN services on IP-

^{223/} See AT&T Comments at 31-32 (“To realize these benefits, however, the entire industry — service providers, manufacturers, and PSAPs — must work together to overcome a number of substantial obstacles.”); BellSouth Comments at 49-50 (encouraging the Commission to allow voluntary efforts to continue); Verizon Comments at 53-54 (“[I]t is apparent that voluntary industry consensus, rather than Commission regulation, will best facilitate deployment of IP-enabled E911 services.”).

^{224/} See SBC Comments at 37; see also MCI Comments at 37 (discussing voluntary, cooperative efforts to fashion VoIP 911 standards and solutions); AT&T Comments at 30-31 (same); BellSouth Comments at 50 (same); Verizon Comments at 53 (same).

^{225/} Vonage Comments at 43.

^{226/} See SBC Comments at 99-100 n.236 (citing VoIP Fact Report at 17).

enabled services. As several commenters note, E-911 service is not technically feasible for non-registered VoIP (*i.e.*, mobile or “nomadic” VoIP that is used by the subscriber at a location other than his or her primary location).^{227/} This is because the same flexibility that allows a VoIP user to access his VoIP service from any broadband connection undercuts his VoIP provider’s ability to offer E-911 service. Unless the customer informs his VoIP provider of his location in advance (as is done with registered VoIP use), the VoIP provider cannot route the emergency call to the appropriate PSAP or forward the caller’s physical location. As Vonage cautions, “[T]he Commission should not seek to impose standards on VoIP that the industry is currently unable to meet.”^{228/} And it would not make sense for the Commission to impose standards today, even if they were modified to capture the existing capabilities of IP-enabled services; this is a rapidly evolving industry, and, as MCI explains, “premature regulation may undermine innovation in the provision of emergency services.”^{229/}

This is not to say the Commission should sit back and do nothing. To the contrary, Commission participation and leadership in the industry’s standard-setting efforts is essential to their success.^{230/} As Avaya notes in its comments, “[t]here must be sustained coordination between this Commission, manufacturers, service providers, and . . . PSAPs.”^{231/} Addressing

^{227/} See AT&T Comments at 31-32; MCI Comments at 37; BellSouth Comments at 51-52; Verizon Comments at 51-52; Vonage Comments at 39-40; USTA Comments at 40-41; Avaya Comments at 21 (“Enhanced 911 capabilities are generally not feasible in IP-enabled networks today when the end-user is taking advantage of the nomadic capabilities of IP-enabled phones.”). *But see* Level 3 Comments at 36 (“it is technically possible for service providers [to adapt their services to provide 911 and E-911] . . . today”).

^{228/} Vonage Comments at 43.

^{229/} MCI Comments at 38.

^{230/} See AT&T Comments at 33.

^{231/} Avaya Comments at 17-18.

technology and standardization issues among so many stakeholders and across jurisdictional divisions among federal, state, and local governments requires strong, national leadership from the Commission. As AT&T states, Commission oversight will “ensure that a cohesive, standardized process can be implemented on a nation-wide basis.”^{232/}

Ultimately, the Commission should adopt only minimum standards that are technologically feasible and necessary to ensure E-911 service for widespread IP-enabled services, without foreclosing future developments.^{233/} By initially creating only baseline standards where needed, the Commission not only will help IP-enabled 911 service realize its full potential, but also will avoid stunting the technological innovations currently taking place. As SBC noted in its opening comments, any standards fashioned for IP-enabled services must leave room for continued technological development and innovation, and should not cramp such development in order to fit within the framework of a technologically outdated or limited system.^{234/} Even once standards have been developed, “a period of transition will be necessary before these capabilities can become a reality.”^{235/}

Commenters raise a few other 911 regulatory issues that merit discussion. First, several commenters suggest that the industry and the Commission cannot establish meaningful 911

^{232/} AT&T Comments at 33. As SBC explained in its opening comments, by working now to establish national standards, the Commission will help prevent the disruption and costs associated with retrofitting solutions after ad hoc standards are allowed to proliferate. *See* SBC Comments at 98; Avaya Comments at 18 (without a “single set of nationwide standards and protocols . . . a hodgepodge of standards will develop that will both radically increase the costs of coordinating with PSAPs on a nationwide basis, and harm competition for IP-enabled services, because customers will be unable to use multiple vendors in their networks”).

^{233/} *See* BellSouth Comments at 49 (suggesting that compliance with E-911 requirements be required only where “economically and technically reasonably achievable”).

^{234/} *See* SBC Comments at 103-04.

^{235/} AT&T Comments at 32-33.

standards and obligations for VoIP unless the Commission acts to ensure IP-enabled services providers have access to existing wireline 911 infrastructure from ILECs.^{236/} However, the market appears to be addressing that concern, and thus Commission intervention may be unnecessary. For example, as SBC described in its opening comments, SBC already offers 911 service on a nondiscriminatory basis to all VoIP providers. Thus, without any Commission intervention, VoIP providers already may have the ability to obtain 911 service that enables them to offer their customers E-911 service (for registered or “stationary” VoIP applications) comparable to that offered by legacy voice services.

Second, a few commenters suggest that, in the near-term, VoIP providers should be required to inform consumers if their VoIP service does not offer 911 service that is functionally equivalent to that provided by traditional telephone providers.^{237/} Many VoIP providers already voluntarily disclose their 911 capabilities and explain explicitly how those capabilities may differ from those of 911 services offered by wireline providers.^{238/} However, to the extent the Commission is concerned about potential misalignment between VoIP emergency calling capabilities and some VoIP users’ emergency calling expectations (despite widespread voluntary disclosure by VoIP providers), the Commission may want to consider implementing uniform IP-enabled 911 capability disclosure standards, and, in so doing, to preempt myriad state-law requirements that might impose different or additional disclosure requirements.

^{236/} See MCI Comments at 40; Comcast Comments Appendix A at 1; Vonage Comments at 40-41.

^{237/} See FERUP Comments at 15; CenturyTel Comments at 24.

^{238/} See, e.g., <http://www.vonage.com/features.php?features=911> (Vonage’s disclosure of 911 capabilities); http://www.voiceglo.com/about_voiceglo/terms (Voiceglo’s disclosure of 911 capabilities); <http://www.packet8.net/about/e911.asp> (8x8’s disclosure of 911 capabilities).

Finally, Comcast raises the issue of extending liability limitations that currently exist for wireline and wireless providers of 911 services to IP-enabled providers of 911 services.^{239/} SBC concurs that limiting liability of IP-enabled 911 service providers is important to encouraging robust 911 development for IP-enabled services. To reward and encourage continued IP-enabled 911 innovation, the Commission should grant to IP-enabled services providers the same limitations of liability as granted to wireline and wireless voice services providers,^{240/} so long as the IP-enabled 911 services meet whatever standards the Commission ultimately adopts for IP-enabled services providers. Creating such parity of liability protection across voice services, regardless of the underlying transmission technology, is important to prevent the inadvertent favoring of some voice transmission technologies over others. Failure to do so would unfairly discriminate against emerging IP-enabled services and distort competition in the market for voice services.

VII. DISABILITY ACCESS IS AN IMPORTANT PUBLIC POLICY THAT THE COMMISSION SHOULD ADDRESS FOR IP-ENABLED SERVICES.

As SBC explained in its opening comments, Commission regulation is necessary to ensure disability access to IP-enabled services.^{241/} Most commenters agree.^{242/} “People with

^{239/} See Comcast Comments Appendix A at 4.

^{240/} See 47 U.S.C. § 615a(a).

^{241/} See SBC Comments at 105.

^{242/} See AT&T Comments at 33-37 (“To make sure the entire industry — manufacturers and service providers — are sufficiently focused on developing accessibility measures, the Commission should extend to VoIP providers the general § 255 mandate to implement ‘readily achievable’ measures.”); BellSouth Comments at 23, 25 (noting that VoIP services that interconnect with the PSTN “should be [] subject to appropriate . . . ADA obligations”); Comcast Comments at 8 and Appendix A at 4 (“VoIP service providers can reasonably be expected to . . . enable access by people with disabilities”); California PUC Comments at 14 (“Customers who are disabled should have reasonable and affordable access to service that is functionally equivalent to voice-grade telephony service offered to non-disabled customers.”); Avaya

disabilities should not lose the access that they have acquired over the past several decades simply because our nation is migrating to more advanced technologies that have far better capabilities than traditional telephony.^{243/} To ensure that the disabled community is not left out of this new generation of important services, the Commission should focus on the substance of disability access issues now, during the formative stages of this technological revolution when there are the most opportunities for incorporating disability access capabilities.^{244/}

A. The Commission Should Not Rely Solely On Market Forces to Provide Access to IP-Enabled Technology for Individuals with Disabilities.

A few commenters suggest that, in light of market forces, disability access regulations are unnecessary and even potentially counterproductive.^{245/} SBC does not dispute that, over time, the market may drive IP-enabled services providers to develop applications designed to serve the needs of disabled end users, and manufacturers of IP enabled equipment may do the same. In fact, many commenters outline the tremendous strides that already have been made in this regard.^{246/} And IP-based services are inherently more adaptable to individual needs than

Comments at 14, 16 (“[T]he Commission should — with appropriate recognition of the ‘readily achievable’ standard and the need for transitions to an IP-enabled environment — extend its existing accessibility rules to VoIP services.”); American Foundation for the Blind Comments at 3-4; Self Help for Hard of Hearing People (“SHHH”) Comments at 1-2 (“Without FCC regulation of IP-[e]nabled services, people with disabilities will not have access to these emerging technologies.”). *But see* VON Coalition Comments at 26 (suggesting that disability access to IP-enabled services “can best be achieved through voluntary efforts encouraged by the Commission but without specific regulatory mandates”).

^{243/} Communication Service for the Deaf Comments at ii.

^{244/} See SBC Comments at 105.

^{245/} See MCI Comments at 42-44 (“There is every reason to believe that the market will produce these [disability access] enhancements without the need of any regulatory interference.”); Qwest Comments at 44-46 (“[R]egulatory measures are unnecessary, and could be counterproductive.”).

^{246/} See, e.g., AT&T Comments at 35 (IP Relay and Video Relay, which allow hearing impaired users to access TRS through the Internet rather than through TTY); MCI Comments at

traditional wireline services.^{247/} But as several commenters caution, “[m]arketplace forces alone . . . may not be enough to ensure that manufacturers and service providers will look for and implement ‘readily achievable’ measures to make VoIP services more accessible.”^{248/} As the American Foundation for the Blind explains, “people with disabilities simply do not have sufficiently focused power in the market place, that is, the power necessary to negotiate rates, terms, and conditions that affect access to services.”^{249/} Avaya similarly notes that “each individual disability population represents only a small portion of the market, and therefore these populations often cannot generate the necessary consumer demand to induce manufacturers to expend the resources to develop accessible technology. This is exacerbated by the fact that individuals with disabilities on average earn lower incomes, which further reduces their power in the marketplace.”^{250/}

And even though the adaptable nature of IP-enabled services together with market forces may eventually produce the correct result, any delay in making IP-enabled services accessible

43-44 (SIP technology to enable vision-impaired individual to engage in text conversation using speech-to-text translation program); Level 3 Comments at 38 (advanced touch-screen displays and voice-activated commands offer communications alternatives for individuals unable to use traditional telephony equipment); SBC Comments at 107 (emergency broadcast system for IP phones capable of notifying employees with hearing or vision impairment in accessible format of emergency alerts).

^{247/} SBC Comments at 105-06; *see also* Avaya Comments at 3 (discussing likelihood that expanded capabilities of IP-enabled services will lead to greater accessibility via IP-enabled services than achieved via traditional telephony services); AT&T Comments at 37 (same).

^{248/} Avaya Comments at 14; *see also* Communication Service for the Deaf Comments at ii (“[M]arket forces have been insufficient to safeguard the needs of people with disabilities to telecommunications access.”).

^{249/} American Foundation for the Blind Comments at 3-4; *see also* SHHH Comments at 2 (“people with disabilities have never constituted a market that would normally motivate companies to innovate”).

^{250/} Avaya Comments at 16

would be unconscionable. As the Commission has recognized, access to communications is “essential for participation in nearly all aspects of our society,” “a critical tool for employment,” and capable of “bring[ing] independence” to individuals with disabilities.^{251/} A delay in making available IP-enabled services — which rapidly are replacing and improving upon traditional telecommunications services — thus would have an unacceptable adverse impact on all aspects of the lives of individuals with disabilities. As Inclusive Technologies notes, barriers to disability access affect the integration and equality of individuals with disabilities as employees (if their employers adopt IP-enabled services that are inaccessible), as entrepreneurs (if the telecommunications tools required for their business are inaccessible), as residential customers (if inaccessible VoIP offerings are less expensive and more robust than traditional voice services), and as students (if educational institutions utilize inaccessible IP-enabled technology).^{252/} Disabled individuals should not be required to sit on the sidelines and wait while the IP revolution unfolds. Access to communications for “*all* the people of the United States” has been a core principle of the Communications Act since 1934,^{253/} serving that core principle requires Commission involvement to ensure basic accessibility principles are integrated *today*, not added as an afterthought sometime in the future.

^{251/} Report and Order and Further Notice of Inquiry, *Implementation of Section 255 and 251(a)(2) of the Communications Act of 1934, as Enacted by the Telecommunications Act of 1996*, 16 FCC Rcd 6417, 6420-21 ¶¶ 4-6 (1999) (“*Disability Access Order*”).

^{252/} Inclusive Technologies Comments at 7.

^{253/} 47 U.S.C. § 151 (emphasis added).

B. The Commission Has Ample Authority to and Should Extend Disability Access Requirements to IP-Enabled Services that Interconnect with the PSTN.

The Commission has clear authority under the Act to pursue the goals expressed above.^{254/} To begin with, section 255 itself expressly applies to all CPE and telecommunications equipment manufacturers, and thus on its face allows the Commission to require accessibility at least for the equipment that supports IP-enabled services.^{255/} With respect to service providers, section 255 grants the Commission express authority to impose disability access requirements on “[a] provider of telecommunications service.”^{256/} However, the Commission already has determined that it may exercise its ancillary jurisdiction to extend disability access requirements to information services where doing so is “essential to the ability of persons to effectively use telecommunications.”^{257/} Otherwise, the Commission would be unable to meet its statutory responsibility to ensure that IP-enabled communications are available “to all the people of the United States,”^{258/} including those with special needs.

^{254/} See SBC Comments at 107-109; American Foundation for the Blind Comments at 4-5; USTA Comments at 38-39.

^{255/} 47 U.S.C. § 255(b); see also SBC Comments at 108. AT&T erroneously states that section, “by its terms, imposes requirements only on manufacturers . . . of telecommunications services, not [] information service[s].” AT&T Comments at 35. In fact, section 255(b) applies to “[a] manufacturer of telecommunications equipment or customer premises equipment,” and the Commission has defined CPE for this purpose to include equipment used for telecommunications, not just telecommunications services. See *Disability Access Order* at 6448 ¶¶ 75-88.

^{256/} 47 U.S.C. § 255(c).

^{257/} *Disability Access Order* at 6457 ¶ 97; see also SBC Comments at 109; AT&T Comments at 35 (“The Commission has recognized . . . that it has authority to impose the same accessibility requirements on information services under its ancillary Title I jurisdiction.”).

^{258/} 47 U.S.C. § 151.

The Commission accordingly has already rejected the argument, advanced by Qwest here, that section 255 (and section 225) is “inapplicab[le]” to IP-enabled services because the text refers only to “common carrier[s]” and “provider[s] of telecommunications service[s],” respectively.^{259/} And in any event, the Commission’s ancillary jurisdiction is specifically designed to address those circumstances that may not be entirely addressed by the express language of the statute. As noted above, the courts have recognized that the Commission’s ancillary jurisdiction is designed to ensure that the Commission may fulfill its obligations and policies even as technology rapidly develops and changes.^{260/} And, contrary to Time Warner Telecom’s contention that the Commission’s ancillary authority is on “shaky” ground with respect to disabilities access,^{261/} the fact that Congress made its goals concerning disabilities access crystal clear emphasizes, rather than undermines, the case for the Commission’s ancillary authority.^{262/} In exercising its authority with respect to disabilities access in the market for these new communications services, the Commission will be advancing, rather than undermining, the substantive principles embodied in the Communications Act.^{263/}

^{259/} See Qwest Comments at 44.

^{260/} See SBC Comments at 53-54; see also *Southwestern Cable*, 391 U.S. at 178; *United States v. Midwest Video Corp.*, 406 U.S. 649 (1972) (“*Midwest Video I*”).

^{261/} See Time Warner Telecom Comments at 30-31, 35-36 (stating that the “social policies [of sections 225 and 255] would not apply to VoIP if it were classified as a non-telecommunications service on the ground that “[a]ttempts to extend regulations to VoIP that apply under the terms of the statute only to common carriers/telecommunications carriers . . . rest on a shaky legal foundation.”).

^{262/} See Report and Order and Further Notice of Proposed Rulemaking, *Digital Broadcast Content Protection*, 18 FCC Rcd 23550, 23563 ¶ 29 (2003) (“*Digital Broadcast Content Order*”) (citing *Southwestern Cable*, 392 U.S. at 178).

^{263/} See SBC Comments at 56 (citing *Midwest Video II*, 440 U.S. at 700-09 (invalidating Commission attempt to impose on cable companies under Title I the type of common carrier regulation that the Act would prohibit if the regulated parties had been broadcasters rather than cable companies)).

Of course, as SBC and most commenters propose, disability access should be required only for those IP-enabled services that interconnect with the PSTN.^{264/} The Commission’s ancillary jurisdiction is most clear with respect to such services, because they will, over time, replace and, in the interim and foreseeable future, interact transparently with legacy PSTN services. If the Commission did not have ancillary jurisdiction here, it would be unable to serve Congress’s overarching goal of ensuring that the communications network is accessible to all. In addition, limitations on accessibility or interoperability for new IP-enabled services could ultimately reduce the value of the access people with disabilities obtain with respect to legacy services. In such circumstances, courts have upheld the Commission’s exercise of ancillary jurisdiction.^{265/}

There is no basis for some commenters’ suggestion that accessibility requirements should be limited to IP-enabled *voice* services.^{266/} Nothing in the text of sections 255 and 251(a)(2) limits disability access to voice telecommunications services, and therefore there is no reason to limit accessibility to only the voice category of the new services that increasingly will displace existing telecommunications services. In addition, some non-voice IP-enabled services may help facilitate the ability of individuals with disabilities to communicate with individuals using voice

^{264/} PSTN interconnection is a technology-neutral criterion that gauges whether the service can be used to communicate on the nation’s primary communications infrastructure; it does not gauge, as one commenter suggests, “the type of carriage being used to convey the communication.” Communication Service for the Deaf Comments at 6.

^{265/} See *Midwest Video II*, 440 U.S. at 706-07 (ancillary jurisdiction appropriate to “prevent interference with the Commission’s work”); *Disability Access Order* at 6455 ¶ 93.

^{266/} See AT&T Comments at 33-34 (“[T]he Commission should extend its § 255 disability rules to IP-enabled voice services.”); MCI Comments at 42-43 (discussing the Commission’s ancillary jurisdiction to impose disability access requirements on “a subset of IP-based voice applications . . .”); see also Comcast Comments at 8 (“VoIP providers can reasonably be expected to enable access by people with disabilities.”); Time Warner Inc. Comments at 14 (“VoIP services that meet [certain] criteria . . . [should be] subject to disability requirements.”).

communications, and it therefore would make no sense to exclude these services arbitrarily from the accessibility requirements. For example, text-to-speech technology could facilitate communication between a speech-impaired IP-enabled services end user and an end user using a PSTN-based voice service. The Commission should formulate rules that encourage, rather than discourage, the development and deployment of such technologies. And as a general practical matter, it should be no more difficult for IP-enabled services providers to make their non-voice services accessible to individuals with disabilities than to make their voice services accessible.

The Commission also has authority to extend section 225's TRS contribution requirements to IP-enabled services providers.^{267/} While Qwest suggests that the Commission's authority under section 225 is limited to common carriers,^{268/} that is not the case: section 225 authorizes the Commission to collect TRS contributions from "subscribers for every interstate service."^{269/} And in any event, the Commission at a minimum possesses ancillary jurisdiction to require IP-enabled services providers to contribute to the TRS fund because the Commission otherwise would be unable to discharge its statutory obligations under sections 225 and 251 of the Act.^{270/} The Commission should exercise that authority to require TRS contributions, because doing so will ensure critical TRS funding even while voice traffic migrates from

^{267/} See SBC Comments at 111; Comcast Comments Appendix A at 4; USTA Comments at 39.

^{268/} See Qwest Comments at 44 (arguing that section 225 "applies to common carriers providing voice services" and is "inapplicab[le]" to IP-enabled services).

^{269/} 47 U.S.C. § 225(d)(3)(B).

^{270/} *Id.* § 225 (obligating the Commission to ensure that interstate and intrastate TRS is available to hearing- and speech-impaired individuals); *id.* § 151 (obligating the Commission to ensure, nationwide, generally available communications "to all the people of the United States").

wireline services to IP-enabled services.^{271/} To ensure access to new and innovative IP-enabled services, in addition to continued access via existing TRS technology, the Commission also should reaffirm its decision to allow reimbursement of IP-enabled TRS from the interstate TRS fund.^{272/}

VIII. THE COMMISSION HAS THE AUTHORITY TO REQUIRE UNIVERSAL SERVICE CONTRIBUTIONS FROM, AND TO PROVIDE UNIVERSAL SERVICE SUPPORT TO, IP-ENABLED SERVICES PROVIDERS.

As SBC and nearly all other commenters who have addressed the issue advocate, the Commission should take this opportunity to remedy the current inequity in its universal service support policies and to preserve the universal service funding base by requiring contributions from IP-enabled services providers. Further, as a number of commenters recognize, it may be appropriate for the Commission to consider supporting IP-enabled services at some point in the future, although such support is unnecessary today.

A. The Commission Should Require Providers of IP-Enabled Services to Contribute to Universal Service.

The communications market has witnessed an increasing shift of traffic and revenues from traditional PSTN-based traffic to information services offered over broadband networks,

^{271/} See SBC Comments at 111; National Consumer League Comments at 6 (“Without [VoIP providers’] participation in the [TRS] fund, there will be fewer resources to make access via relay available to people who rely on it to communicate by telephone.”); Communication Service for the Deaf Comments at 10 (“As IP-enabled services increasingly take the place of traditional telephone services, support for relay services will erode unless the companies that provide these Internet services are required to contribute proportionally to the TRS Fund.”); Telecommunications for the Deaf Comments at 8 (“[T]he migration of telecommunications traffic to the Internet might undermine the current compensation program among telecommunications providers.”).

^{272/} SBC Comments at 112 (citing Declaratory Ruling and Second Further Notice of Proposed Rulemaking, *Provision of Improved Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, 17 FCC Rcd 7779, 7792 ¶ 41 (2002)).

but the Commission’s universal service support policies continue to impose the overwhelming bulk of universal service support obligations on legacy common carriers. This is so even though many of the new providers of IP-enabled services interconnect with, and send traffic to, the PSTN. As SBC recommended in its opening comments, and as many commenters agree, the Commission should eliminate this basic unfairness and require IP-enabled services providers who interconnect with the PSTN to contribute to the federal universal service fund, a result that follows naturally from the Commission’s recent pronouncements that those who use and benefit from the PSTN should contribute to its support.^{273/}

This view is supported by the overwhelming majority of commenters, including state regulators and competitors from all corners of the industry, who recognize that requiring IP-enabled services providers that interconnect with the PSTN to contribute to universal service support would be more equitable than the current system and would best preserve universal service.^{274/} As AT&T notes, for example, a contribution system that includes IP-enabled services providers would be “much more equitable than the current system” and would “halt the

^{273/} *AT&T Access Charge Order* ¶ 15.

^{274/} *See, e.g.*, Verizon Comments at 55 (“The Commission should ensure that all providers of VoIP contribute to universal service”); Comcast Comments at 8 and Appendix A, at 3 (suggesting that VoIP providers who use NANP numbers should contribute to universal service); Time Warner Inc. Comments at 15 (recommending that VoIP providers who use NANP numbers and interconnect with the PSTN should be required to contribute to universal service); New York AG Comments at 9 (recommending that “the Commission require all VoIP service providers to contribute to the USF in a manner similar to that applicable to non-VoIP providers”); Texas AG Comments at 4 (“[T]he Commission should require VoIP service providers to contribute to universal service.”); Interstate Telecom Consulting, Inc. (“ITCI”) Comments at 8 (“In light of the facilities and benefits they enjoy as a result of the Universal Service Fund, VoIP providers should be required to contribute to it.”); National Grange Comments at 2 (“IP-enabled voice service providers (VOIP) must contribute to the universal service fund to ensure affordable access to telecommunications services for all Americans.”); *see also* Sprint Comments at 22; Valor Telecommunications Comments at 12; Virgin Mobile USA Comments at 7-9; Communications Workers of America (“CWA”) Comments at 17-18.

erosion of the contribution base that is a result of the migration to nontraditional services.”^{275/}

Similarly, the Office of the Attorney General of Texas “urges the Commission to ensure that VoIP services that send traffic to the PSTN contribute to universal service,” noting that as “more customers migrate to VoIP service, the cost of universal service and maintenance of the PSTN will fall on consumers that remain on the PSTN, unless some action is taken.”^{276/} Several other commenters note that broadening the universal service contribution base would not only better preserve universal service fund support but would eliminate the increasing imbalance caused by the existing narrow contribution requirements.^{277/}

A sparse handful of commenters suggest that there is no need to require contributions from IP-enabled services providers, because the underlying telecommunications carriers who provide the transmission used by IP-enabled services providers already contribute based on the revenues earned in connection with those transmission services, while non-facilities-based VoIP providers contribute indirectly through the revenues they pay to these underlying carriers.^{278/}

^{275/} AT&T Comments at 38-39.

^{276/} Texas AG Comments at 3.

^{277/} *See, e.g.*, Virginia SCC Comments at 18 (failure to require IP-telephony providers to contribute would be “unfair to other carriers [and] put . . . the system of universal service at even greater risk than it is already experiencing in today’s environment”); Verizon Comments at 55 (“[T]he obligations to contribute to the [universal service fund] should be applied in a competitively neutral manner to all providers of voice services — including both traditional wireline and VoIP service.”).

^{278/} *See, e.g.*, Skype Comments at 5; Vonage Comments at 49-50. CompTel suggests that requiring IP-enabled services providers to contribute directly to universal service could result in double recovery. CompTel/ASCENT Comments at 18 (“The Commission needs also to ensure that modifications to the universal service fund contribution mechanism do[] not unduly burden providers of IP-enabled applications as both direct and indirect contributors to the universal service fund, due to their incorporation of underlying communications services.”); *see also* Vonage Comments at 51 (suggesting that, because IP-enabled services providers already contribute indirectly to universal service, collecting directly from such providers would yield little if any benefit in terms of universal service support relief).

Under the current system, underlying telecommunications carriers do pay universal service support based on the revenues they earn from providing wholesale transmission service to the IP-enabled services provider, these wholesale revenues are typically low relative to the retail revenues the IP-enabled services provider in turn earns when it bundles that transmission with its own services. The minimal “indirect” contribution IP-enabled services providers make is far less than the approximately 10% contribution other providers pay with respect to their retail revenues. The New York Attorney General and other commenters correctly observe that sparing IP-enabled services providers from this full contribution burden creates an artificial price differential between VoIP and PSTN services and threatens to “undermin[e] USF and the PSTN itself.”^{279/}

Several commenters recommend that the Commission change the existing contribution methodology and adopt a “numbers” or “connection-based” contribution methodology.^{280/} However, the Commission has properly decided to “leave questions of whether to reform the current methodology to the separate *Universal Service Contribution Methodology* proceeding.”^{281/} The choice of a contribution methodology is logically separate from the question of which carriers should bear a contribution obligation. The Commission should focus first on determining who must contribute to universal service in this proceeding before establishing a contribution methodology. The Commission’s decision on an appropriate contribution methodology could then be informed by decisions to require contributions from IP-

^{279/} Attorney General of the State of New York (“New York AG”) Comments at 9-10; *see also* Virginia SCC Comments at 18.

^{280/} *See, e.g.*, MCI Comments at 49-50; AT&T Comments at 37-40; Level 3 Comments at 22-24; Ad Hoc Telecommunications Users Committee Comments at 13-18.

^{281/} *IP-Enabled Services NPRM* ¶ 63.

enabled services providers that interconnect with the PSTN and to require contributions from cable modem providers.

B. The Commission Has Ample Authority to Require Providers of IP-Enabled Services to Contribute to Universal Service.

The Commission has ample authority under the Act to assess universal service contributions from IP-enabled services providers. The Commission’s permissive authority authorizes it to assess contributions from “any . . . provider of interstate *telecommunications* . . . if the public interest so requires.”^{282/} As SBC and many other commenters explain, the Commission’s express permissive authority under section 254(d) extends to any provider that offers IP-enabled service to its subscribers using some form of telecommunications, *i.e.*, transmission, that it owns or leases.^{283/} Indeed, the Commission has already tentatively determined that an information service provider that “owns or leases the underlying transmission facilities on which its packets are transmitted . . . is providing telecommunications” and therefore falls within the scope of the Commission’s permissive contribution authority.^{284/}

Some commenters nevertheless argue that the Commission does not have the authority to require support from information service providers and thus cannot recover universal service contributions from providers of IP-enabled services. However, the few commenters who contend the Commission has no authority^{285/} simply fall back on the argument that no

^{282/} 47 U.S.C. § 254(d).

^{283/} SBC Comments at 113-14; Verizon Comments at 61; Vonage Comments at 51; NCTA Comments at 25.

^{284/} Notice of Proposed Rulemaking, *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, 17 FCC Rcd 3019, 3033 ¶ 25 (2002) (“*Wireline Broadband NPRM*”).

^{285/} *See, e.g.*, ITAA Comments at 15-16; Pac-West Comments at 17-19; Sprint Comments at 30-33.

information service providers provide telecommunications. For example, the Information Technology Association of America (“ITAA”) argues that the Commission lacks the authority to require information service providers to contribute to the universal service fund because “[i]nformation service providers do not ‘provide’ telecommunications services — they *use* telecommunications in order to provide information services.”^{286/} These commenters fail to recognize that the Commission has already suggested that an information service provider could properly be considered to be “providing telecommunications to itself” and that “it may be advisable to exercise our discretion under the statute to require such providers that use their own transmission facilities to contribute to universal service.”^{287/}

Further, even if the Commission’s permissive authority were insufficient (as some commenters suggest), the Commission’s *ancillary authority* under Title I provides the Commission with distinct power to require universal service contributions of IP-enabled services providers.^{288/} Title I establishes a mandate for the Commission to create a universal service program by authorizing the Commission to “regulat[e] interstate . . . commerce in communication by wire and radio so as to make available, so far as possible, to all people of the United States . . . a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges.”^{289/} The Commission’s ancillary Title I universal service authority, found in sections 151 and 154(i), is an independent basis for the

^{286/} ITAA Comments at 15-16; Sprint Comments at 30-31 (citing S. Rep. No. 104-23, at 28 (1995)).

^{287/} See *Report to Congress* at 11534-35 ¶ 69, 11569-70 ¶ 139.

^{288/} See, e.g., Time Warner Inc. Comments at 15, 23 (advocating that VoIP providers be assessed universal service contributions and noting that the Commission can use its Title I ancillary jurisdiction to achieve the regulatory framework Time Warner advocates even if VoIP services are classified as information services).

^{289/} 47 U.S.C. § 151.

Commission’s universal service program that predates section 254 of the Act. Indeed, the Commission relied on this authority to adopt a universal service program — and the courts affirmed the exercise of that authority — long before Congress enacted section 254.^{290/} Further, because the migration of consumers from legacy common carriers to IP-enabled services providers has the potential to dramatically affect the funding base for universal service, the Commission would be well within its ancillary authority to support the PSTN by imposing contribution obligations on the providers of information services who benefit from their ability to interconnect with, and impose burdens upon, the PSTN.^{291/} As noted above, the courts have long recognized the Commission’s authority to prevent “interference” with its ability to accomplish the Act’s purposes.^{292/} In sum, between the Commission’s express permissive authority and ancillary jurisdiction, there is no question that the Commission has the ability to require all IP-enabled services providers to support universal service.

The Commission also has ample authority, when revising its universal service support policies to account for IP-enabled services, to correct the serious competitive inequity that exists in the current framework between DSL and cable modem services providers.^{293/} As SBC and several other commenters note, the Commission should do so promptly.^{294/} Today, the

^{290/} See generally Decision and Order, *Amendment of Part 67 of the Commission’s Rules and Establishment of a Joint Board*, 96 F.C.C.2d 781, 791-802 ¶¶ 21-48 (1984), *aff’d*, *Rural Tel. Coalition v. FCC*, 838 F.2d 1307, 1315 (D.C. Cir. 1988) (declaring that “universal service is an important FCC objective” and establishment of a Universal Service Fund is “within the Commission’s statutory authority” under section 151).

^{291/} See Time Warner Inc. Comments at 23; Texas AG Comments at 5.

^{292/} See *Midwest Video II*, 440 U.S. at 706-07.

^{293/} See SBC Comments at 118-19.

^{294/} See, e.g., Illinois Commerce Commission Comments at 15 (“[C]ompetitive equity considerations and the benefits of widely and properly diffusing responsibility for supporting universal service argue, at least for some time period, for both wireline and non-wireline

Commission assesses universal service contributions from providers of DSL service, because DSL service is classified as a telecommunications service and is therefore subject to a mandatory contribution requirement.^{295/} On the other hand, because cable modem service is classified as an information service, providers of cable modem service are not required to contribute to universal service.^{296/} To remedy this inequity, the Commission should use its permissive authority to assess contributions on cable modem service providers, which provide telecommunications to themselves as an input into their cable modem service offerings.^{297/} As numerous commenters from both industry and government note, principles of competitive neutrality mandate that the Commission promote universal service in an equitable manner and avoid artificially skewing the market for broadband Internet access service by excusing cable modem service from contribution obligations.^{298/} The current disparity severely distorts the competitive playing field for broadband services and creates disincentives to investment for wireline broadband Internet access.^{299/}

broadband platform providers to participate in the support of universal service.”); Covad Comments at 29 (“[P]roviders of cable modem broadband Internet access services continue providing service without paying universal service contributions based on their revenues from such service. . . . The Commission should end this regulatory disparity, and act now to ensure that all providers of broadband transmission services . . . with an integrated facilities-based broadband transmission component, contribute equitably into the federal universal service fund.”); Organization for the Promotion and Advancements of Small Telecommunications Companies (“OPASTCO”) Comments at 9 (“[T]he FCC should require all facilities-based broadband Internet access providers to contribute to the Universal Service Fund (USF).”).

^{295/} See *Wireline Broadband NPRM* at 3051-54 ¶¶ 72-79.

^{296/} See *id.*

^{297/} See *Report to Congress* at 11534-35 ¶ 69, 11569-70 ¶ 139.

^{298/} See, e.g., Illinois Commerce Commission Comments at 15; Covad Comments at 29; OPASTCO Comments at 9-10.

^{299/} See SBC Comments at 119.

C. The Commission Has the Authority to Provide Universal Service Support to IP-Enabled Services, If and When Appropriate in the Future, But It Should Not Do So Now.

In addition to requiring universal service contributions from providers of IP-enabled services, the Commission has authority to provide universal service support for those services — if and when the need to do so arises in the future — though it should not exercise that authority now. As noted in SBC’s opening comments, the Commission’s longstanding Title I authority to make affordable communications available nationwide fully empowers it to support new technologies at a later date should that become necessary.^{300/} The Commission retains the general Title I authority “to make available, so far as possible, to all the people of the United States . . . a rapid, efficient, Nation-wide, . . . wire and radio communication service with adequate facilities at reasonable charges.”^{301/} While section 254 does not explicitly authorize support for information services, it clearly does not prohibit the Commission from providing such support to advance the general mandate of section 151, which supplied the Commission with ample authority to maintain a universal service program for more than a decade before Congress enacted section 254 in the 1996 Act.^{302/}

Other commenters agree that universal service funding may be appropriate for IP-enabled services. FERUP, for example, advocates that “if VoIP providers ultimately are required to share in the burden” of contributing to universal service, “they ought to be considered for USF

^{300/} *Id.* at 122.

^{301/} 47 U.S.C. § 151.

^{302/} In addition, if the Commission found it necessary, the Commission has the authority under section 10(a) to forbear from the provisions in section 254(c)(1) and 254(e) that limit universal service support to telecommunications services.

distributions.”^{303/} Time Warner similarly notes that “VoIP providers should be entitled to the same rights as circuit-switched CLECs . . . to receive universal service subsidies.”^{304/}

While the Commission has *authority* to provide universal service support for IP-enabled services under the appropriate circumstances in the future, SBC emphasizes that the Commission should *not* do so now. Unlike the mature market for POTS service, the market for IP-enabled services is still in its infancy, and it would be premature for the Commission even to begin considering which IP-enabled services to support or whether IP-enabled services are even in *need* of support in the first place. Rather, the Commission should simply affirm that it has authority to support IP-enabled services if that need arises in the future.

IX. INDUSTRY-SPECIFIC CONSUMER PROTECTION REGULATION OF IP-ENABLED SERVICES PROVIDERS IS UNNECESSARY BECAUSE STATE AND FEDERAL LAWS OF GENERAL APPLICABILITY PROVIDE CONSUMERS AMPLE PROTECTION.

As SBC explained in its opening comments, the Commission need not and should not extend legacy telecommunications carrier consumer protection regulations to the IP-enabled services market because federal and state laws of general applicability already restrict practices by IP-enabled services providers that could harm consumers. In the words of FERUP,

^{303/} FERUP Comments at 16.

^{304/} Time Warner Inc. Comments at 2; *see also* Comcast Comments Appendix A at 2 (VoIP providers who interconnect with the PSTN should have “[t]he right to draw from universal service mechanisms for high-cost/rural support”); Time Warner Telecom Comments at 30 (“Eliminating VoIP from the class of service subject to subsidy would therefore gradually reduce the number of eligible recipients of universal service funding or relegate those recipients to less sophisticated TDM voice offerings. It is hard to see how this outcome comports with the intent of Congress in enacting Section 254.”).

“[e]xisting federal and state generic consumer protection laws are sufficient to address the vast majority of consumer protection issues.”^{305/}

Furthermore, as many commenters, including SBC, explain, regulations should in most cases prove unnecessary, because the IP-enabled services market is highly competitive and marked by low barriers to entry. Market forces therefore should and do effectively constrain the behavior of providers in the market. As the Voice on the Net (“VON”) Coalition notes, “In a competitive telecommunications marketplace, VoIP providers must provide . . . basic consumer protections in order to attract or retain customers. If a VoIP provider does not offer such protections, it will lose customers to competitors who do.”^{306/} Indeed, as SBC and others note, market forces already have encouraged providers to work voluntarily to protect consumers’ privacy interests.^{307/} Legacy regulations, which were “developed to protect consumers from the monopoly utility in a single-provider environment, are unnecessary and inappropriate for

^{305/} FERUP Comments at 17. Most other commenters agree. *See, e.g.*, AT&T Comments at 40-41; Comcast Comments at 9-10; 8x8 Comments at 29-31; Verizon Comments at 30 n.78; Cablevision Systems Comments at 13-14; Net2Phone Comments at 20; VON Coalition Comments at 28-29.

^{306/} VON Coalition Comments at 29; *see also* Net2Phone Comments at 20-21 (“Utility-type regulation simply is not justified when market competition and existing consumer protection laws effectively shield consumers from excessive prices and unfair practices. . . . Since providers actively compete for consumers, the market offers sufficient incentives for VoIP providers to offer high quality services and products that meet customer demand.”); Nuvio Comments at 8 (suggesting it is “premature” to impose regulatory requirements developed for the traditional telecommunications context on the nascent IP-enabled services industry, “particularly when market forces are already bringing essential capabilities, as well as expanded functionality, to IP-enabled services”).

^{307/} *See, e.g.*, AT&T Comments at 41-42 (discussing provisions of AT&T’s voluntarily adopted privacy policy which protect consumer information from unauthorized disclosure or sharing); SBC Comments at 125 (discussing industry-wide groups such as the TRUSTe Privacy Partnership designed to develop standards for consumer privacy protection and ensure provider compliance).

competitive VoIP services.”^{308/} As Comcast explains, “fully functioning markets do a better job of maximizing consumer welfare than regulators can ever hope to do.”^{309/}

Some commenters nonetheless argue that the Commission *should* extend specific legacy telephone network regulations to IP-enabled services providers.^{310/} But none of these commenters provide compelling explanations as to why there is any need to do so, nor do they explain how their suggestions can be squared with the unregulatory framework that Congress and the Commission have advocated for IP-enabled services.^{311/} For example, the Illinois Commerce Commission and Time Warner Telecom suggest that concerns over “slamming” warrant extending the Commission’s anti-slamming regulations to cover IP-enabled services;^{312/} the Illinois Commerce Commission also argues that the Commission’s Truth-in-Billing (“TIB”) rules should apply to IP-enabled services providers;^{313/} the U.S. Department of Justice and the

^{308/} NCTA Comments at 19-20; *see also* Texas AG Comments at 14 (“[L]aws and regulations which arose out of legacy telephone service should not be presumed to apply to VoIP services.”).

^{309/} Comcast Comments at 10 (quoting Commissioner Kathleen Q. Abernathy); *see also* Net2Phone Comments at 20-21 (“In order to maintain the incentive to offer novel services, however, IP-enabled technologies must be left to flourish in an environment that embraces innovation rather than stifles it through the imposition of outmoded requirements. At this stage in the market, there is no justification for the imposition of traditional telephony regulation on IP services.”); Level 3 Comments at 39 (stating that since the market is addressing consumers’ concerns, the Commission “should not contort statutory definitions or expansively interpret its ancillary jurisdiction to address them on its own”).

^{310/} *See, e.g.*, CenturyTel Comments at 22; National Grange Comments at 3; Alliance for Public Technology Comments at 6.

^{311/} *See* 47 U.S.C. § 230(b)(2) (“It is the policy of the United States” 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.”); *IP-Enabled Services NPRM* ¶ 5 (expressing the Commission’s intent to “rely[] wherever possible on competition and apply[] discrete regulatory requirements only where such requirements are necessary to fulfill important policy objectives”).

^{312/} *See* Illinois Commerce Commission Comments at 16-17; Time Warner Telecom Comments at 32.

New York Attorney General's Office advocate extending the Commission's CPNI regulations to IP-enabled services providers,^{314/} and, other commenters, including CenturyTel, advocate extending a broad range of legacy telephone network regulations to IP-enabled services providers.^{315/} But each of these proposals is essentially a reflexive regulatory reaction that does not engage in any serious analysis of the IP market or federal communications policy.

No commenter has articulated why or how slamming is a significant concern in the context of IP-enabled services. By contrast, AT&T suggests that there are technical barriers to slamming an IP-enabled services customer, arguing that "[a] would-be slammer would literally have to install a telephone adapter in an end-user's residence," and that "[s]lamming is no more a practical threat in the VoIP environment than it is in the ISP industry."^{316/} But even leaving aside the technical feasibility of slamming, no commenter presents evidence that slamming has in fact occurred, much less at a frequency that would warrant regulatory intervention.

Indeed, anti-slamming rules were developed for the legacy telephone services market where slamming is a real and present concern. Neither the Illinois Commerce Commission nor Time Warner Telecom explains why it makes sense to impose regulations in the IP-enabled services market *before* there is any evidence that a problem exists. Nor do they explain why it would not make more sense to address any concerns about the potential for slamming through generally applicable consumer protection laws prohibiting fraudulent practices and appropriate

^{313/} See Illinois Commerce Commission Comments at 16-17.

^{314/} See U.S. Department of Justice Comments at 17; New York AG Comments at 10-11.

^{315/} See CenturyTel Comments at 22; National Grange Comments at 3; Alliance for Public Technology Comments at 6.

^{316/} See AT&T Comments at 41.

and stringent number portability rules. That approach is surely more consistent with Congress's unregulatory approach to Internet-based technologies, codified in section 230 of the Act.^{317/}

Proposals to impose Truth-in-Billing rules are similarly unnecessary and overly regulatory. IP-enabled services providers are already subject to a host of federal and state requirements that mandate truthful billing and ban deceptive practices.^{318/} As a number of state commenters note, “[t]he states have a long history of regulating against unfair business practices and protecting residents’ rights, even *vis-à-vis* telecommunications services providers.”^{319/}

For similar reasons, no special CPNI rules are necessary. Individual providers and industry-wide partnerships in the IP-enabled services market have already crafted privacy policies to protect consumer proprietary information,^{320/} and market forces will continue to pressure IP-enabled services to improve and promote consumer privacy. As Level 3 notes in its comments,^{321/} the Federal Trade Commission ensures that companies stand by the privacy policies and promises they adopt. There of course is no guarantee the market will always operate

^{317/} See 47 U.S.C. § 230(b)(2) (“It is the policy of the United States” 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.”).

^{318/} See, e.g., Texas AG Comments at 16-17; New York AG Comments at 11-12; AT&T Comments at 41.

^{319/} Texas AG Comments at 15-17 (discussing examples of state consumers protection laws such as the Texas Deceptive Trade Practices Act); see also New York AG Comments at 13 (noting that “[s]tate Attorneys General and the Federal Trade Commission serve essential functions to enforce federal and state laws forbidding illegal and deceptive business practices or advertising”). In addition, as SBC noted in its opening comments, the FCC adopted its TIB rules because common carrier billing practices were specifically excluded from generally applicable consumer protection statutes. However, if IP-enabled services are correctly classified as information services, providers in this market would not be common carriers and would therefore be subject to generally applicable consumer protection statutes. See SBC Comments at 125.

^{320/} See, e.g., AT&T Comments at 41; SBC Comments at 125.

^{321/} Level 3 Comments at 39.

as it should, but *existing* federal and state consumer protection laws are designed to police such market failures and abuses. And, of course, as the Texas Attorney General notes, if, over time, the Commission “determine[s] on the basis of actual experience in the marketplace,” that there are areas that “require specific consumer protection regulations to protect consumer interests,”^{322/} the Commission can address such issues at the proper time. As Verizon aptly states, “[r]ather than saddling emerging technologies and services with complicated rules that may prove entirely unnecessary, the Commission [should] revisit the issue only where there is a demonstrated need for specific protections.”^{323/}

There are a handful of issues today, however, that may merit some minimal regulation. As SBC suggested, the Commission may wish to consider requiring IP-enabled services providers to give customers some limited notice of discontinuance of service, because market forces are least effective when a provider is exiting the marketplace, and because discontinuance of service could have a substantial effect on customers’ seamless access to communications services.^{324/} Section 151 of the Act would support the Commission’s authority to address this concern.^{325/} As most commenters note, however, the Commission should not and need not extend the full range of entry and exit regulations to the IP-enabled services industry.^{326/}

^{322/} Texas AG Comments at 17.

^{323/} Verizon Comments at 30 n.78.

^{324/} In addition, Time Warner Telecom suggests that concerns about “ensuring that telephone and other telecommunications service customers are granted an adequate transition period to choose another service provider before their existing service arrangements are discontinued” warrant extending at least some service discontinuance protections to IP-enabled services customers. Time Warner Telecom Comments at 32.

^{325/} As SBC has noted, the Commission’s section 151 mandate to ensure “adequate facilities” for communications, especially for “promoting safety of life and property,” provides a firm basis for exercising Title I authority to require providers to give customers limited notice before discontinuing a customer’s service. *See* SBC Comments at 126-27 (citing 47 U.S.C. § 151). The

As SBC noted in its opening comments, SBC is committed to working with consumers and other stakeholders to prevent unfair business practices and protect consumer interests. As the majority of commenters note, state and federal laws of general applicability provide consumers in the emerging market for IP-enabled services with ample protection. The Commission can best serve the interests of both consumers and IP-enabled services providers by relying on those general laws and allowing this well-functioning market to continue to grow unimpeded by superfluous legacy regulations.

exercise of such authority would clearly be “reasonably ancillary” to fulfilling the Commission’s responsibility under section 214(a) of the Act for overseeing the discontinuance of service by common carriers.

^{326/} See, e.g., AT&T Comments at 40-41; Comcast Comments at 9-10; Verizon Comments at 28, 30 n.78.

CONCLUSION

The Commission should establish an unregulatory framework for IP-enabled services by adopting the approach that SBC outlined in its previously filed petitions and opening comments, and which the majority of commenters support. Doing so will ensure that these services continue to thrive in a “vibrant and competitive free market” as contemplated by the Act, which will bring immeasurable benefits to American consumers and businesses.

Respectfully submitted,

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July 14, 2004

CERTIFICATE OF SERVICE

I do hereby certify that I have caused the foregoing Reply Comments of SBC Communications Inc. to be filed with the FCC, via its Electronic Comment Filing System, in WC Docket 04-36 this 14th day of July, 2004.

/s/ John Meehan

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)
)
IP-Enabled Services) WC Docket No. 04-36

**COMPETITION IN THE PROVISION OF VOICE OVER IP
AND OTHER IP-ENABLED SERVICES**

**Prepared for and Submitted by
BellSouth, Qwest, SBC, and Verizon**

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COMPETITION IN THE PROVISION OF VOICE OVER IP AND OTHER IP-ENABLED SERVICES

This report describes the state of competition in the provision of Voice over Internet Protocol (“VoIP”) and other IP-enabled services, and the extent to which these services compete with traditional telecommunications services and networks.¹

The main prerequisite for providing VoIP service is a broadband connection, which between 85 and 90 percent of U.S. households can now obtain from a provider *other than* their incumbent local telephone company. Riding on this competitive infrastructure, a wide range of competitive providers are deploying and marketing VoIP services nationwide. All six major cable operators, which collectively reach 85 percent of U.S. households, have begun commercial deployment of IP telephony, or have announced plans to do so imminently. VoIP services are now being offered in markets throughout the country by AT&T, other traditional CLECs and interexchange carriers, and a new breed of VoIP-only competitors.

VoIP services match the functionality of conventional circuit-switched voice in virtually all respects, including voice quality, backup power, total home wiring, and number portability, and are typically priced 30-40 percent or more below comparable circuit-switched offerings. VoIP providers also offer many features that are unavailable on conventional circuit-switched networks.

VoIP providers now market their service as a primary-line replacement, and the majority of consumers are purchasing the service as such. Significant numbers of consumers have already abandoned circuit-switched service in favor of VoIP, and their ranks are rising very rapidly. Analysts predict that, within the next three years, local telephone companies will lose up to 10 percent of their lines to cable-operator providers of VoIP services, and millions of additional lines to other VoIP competitors. Consumer surveys corroborate these estimates. The percent of *traffic* migrating from circuit-switched to IP-based networks is substantially higher. These trends establish that consumers view VoIP service as a substitute for conventional voice.

Recent advances also make possible new video-over-IP services that could provide much-needed competition to cable companies. And IP-based services are also being offered competitively to enterprise customers, as both complements to and substitutes for older packet-switched services, such as Frame Relay and ATM.

¹ See *IP-Enabled Services*, Notice of Proposed Rulemaking, WC Docket No. 04-36, ¶ 1 (FCC rel. Mar. 10, 2004) (“Customers are beginning to substitute IP-enabled services for traditional telecommunications services and networks, and we seek comment on the rate and extent of that substitution.”) (“*VoIP NPRM*”).

I. Voice-over-IP Services

A. Competitive Availability, Usage, and Growth

Cable operators, traditional CLECs and interexchange carriers, and a new breed of IP-only providers are now offering VoIP services to mass-market customers throughout the country. See Table 1. Any customer who has access to a broadband connection – which at least 90 percent of all U.S. households now do – can obtain VoIP service from multiple providers. See Appendix A (describing availability of and competition for broadband services).² A large and rapidly growing number of consumers are already purchasing VoIP services, and most of these consumers are buying the service as a replacement for their primary phone line. While VoIP services are still at an early stage of development, growth rates now rival those witnessed in the boom years of Internet in the mid-1990s; no static market-share analysis can capture the true competitive impact of this new technology or the speed at which it is taking hold.³ Industry analysts unanimously agree that a very large number of primary access lines – and an even greater amount of traffic – will migrate to VoIP in the relatively near future.

Most importantly, VoIP is promoting adoption of broadband service itself. Indeed, VoIP is now widely viewed as the “killer app” for broadband service.⁴ Because VoIP will give consumers an increased incentive to subscribe to broadband service, it will expand the base of broadband customers, and thereby lower the average cost of providing broadband service. As

² The cable industry has publicly committed to a policy of “network neutrality” that will enable customers to connect to unaffiliated VoIP providers as easily as they may browse the Internet. See D. Jackson, *NCTA: Cable Won't Get in Vonage's Way*, TelephonyOnline (Dec. 19, 2003) (“Vonage will not be stopped by the cable industry from providing its phone service, even though it competes directly with many cable operators in this emerging market, according to Robert Sachs, president and CEO of the National Cable & Telecommunications Association. This policy is a reflection of the ‘network neutrality’ philosophy adopted by the cable industry that allows broadband users to access any Web site and use any DOCSIS-approved equipment, Sachs said. . . . For a cable company to strip out voice bits of a Vonage transmission would represent a departure from this philosophy, and the industry has ‘no intention’ to do that, he said.”).

³ See, e.g., *Amendment of Parts 2 and 25 of the Commission's Rules To Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range*, First Report and Order and Further Notice of Proposed Rule Making, 16 FCC Rcd 4096, ¶ 298 (2000) (noting that market share of DBS firms in multichannel video programming distribution market “may understate their competitive importance” given the “fast growth of DBS”); *Price Cap Performance Review for Local Exchange Carriers*, Second Further Notice of Proposed Rulemaking in CC Docket No. 94-1, Further Notice of Proposed Rulemaking in CC Docket No. 93-124, and Second Further Notice of Proposed Rulemaking in CC Docket No. 93-197, 11 FCC Rcd 858, ¶ 143 (1995) (“[A]n analysis of the level of competition for LEC services based solely on a LEC's market share at a given point in time would be too static and one-dimensional.”); *Petition of the People of the State of California and the Public Utilities Commission of the State of California To Retain Regulatory Authority over Intrastate Cellular Service Rates*, Report and Order, 10 FCC Rcd 7486, ¶ 103 (1995) (rejecting CPUC's static analysis of wireless market because it did “not fairly reflect the speed at which CMRS market structure conditions affecting cellular services are evolving”); *Revisions to Price Cap Rules for AT&T Corp.*, Report and Order, 10 FCC Rcd 3009, ¶ 19 (1995) (“Market share is only one factor to be considered in determining the level of competition in a given market. Relying solely on AT&T's market share at a given point in time to make this determination would be too static and one dimensional.”).

⁴ See, e.g., D. Jackson, *VoIP Recognition*, TelephonyOnline (Jan. 26, 2004) (Chairman Powell: “VoIP is going to be a tipping point for people to buy broadband.”); *Creation of Online Regulatory Distinctions in VoIP said to Concern AT&T*, Comm. Daily (Feb. 12, 2004) (David Dorman, CEO, AT&T: VoIP is “a killer application for broadband . . . and will be the biggest driver of broadband adoption in the next couple of years.”).

analysts note, consumers will likely switch to VoIP at an even faster rate when regulators stop diverting competition to UNE-based alternatives defined by artificially depressed TELRIC prices.⁵

⁵ See, e.g., G. Miller, *et al.*, Fulcrum Global Partners, *Wireline Communications: Revising BLS and SBC Estimates Due to AWE Dilution* at 2, 7 (Mar. 10, 2004) (“In densely populated UNE-P areas,” “it simply may not make sense for a cable company to aggressively rollout a telephony-like offering,” given the “fear that 50 or more local resellers, with little capital requirements, would flood the market.” Conversely, “the potential elimination of UNE-P resale” would accelerate the adoption of broadband, “as companies would not be as concerned with the loss of telephony subscribers to such companies that do not have to invest in ANY infrastructure.” “Eliminating UNE-P resale all together . . . would offer incentives to cable companies to pursue such a customer base,” and would “further the FCC’s primary objective of near ubiquitous nationwide broadband deployment.”); M. Rollins, *et al.*, Citigroup Smith Barney, *AT&T Corp.* at 3 (Feb. 25, 2004) (while VoIP “makes sense, and can be a long-term source of incremental revenue” for AT&T, it does not “offer[] the same return opportunities as UNE-P given a higher hurdle to clear and sell and service the product.”); F. Governali, *et al.*, Goldman Sachs, *VoIP, It’s ‘Hear’ Now; VON Conference Takeaways* at 2 (Apr. 1, 2004) (“For the next couple of years at least, it is very unlikely that VoIP can be as attractive financially to [AT&T] as the present UNE-P arrangements.”).

Table 1. Deployment and Availability of VoIP Services

	Mass-Market Service Area	Deployment Status
<i>Cable Operators</i>		
Cablevision	4.4 million homes passed	Commercial VoIP service available throughout service area 71,000 VoIP subscribers; adding 3,200 customers per week
Time Warner	18.8 million homes passed	Commercial VoIP service available in 16 markets (Portland, ME; Raleigh, NC; Charlotte, NC; Kansas City, MO; Rochester, NY; Columbus, OH; Western OH, plus 9 markets “quietly added” in May 2004); 30% VoIP penetration among cable modem subscribers in Portland Will deploy “in most, if not all, of our markets” by end of 2004
Cox	10.5 million homes passed	Commercial VoIP service available in Roanoke, VA “Keen interest in rolling out VoIP to all our homes passed;” “plan[s] to move forward with additional [VoIP] deployments later this year”
Charter	11.9 million homes passed	Commercial service in WI and MO; plans to launch in MA in 4Q04 Plans to expand from 120,000 homes passed at the end of 1Q04 to over 1 million by YE
Comcast	39.4 million homes passed	Expanding trial launches in four markets in 2004 (suburban Philadelphia; Indianapolis; Springfield, MA; and Hartford, CT) Will make half of all homes “VoIP-ready” by 2004; 95% by 2005
Adelphia	9.7 million homes passed	Trials planned for 2004; commercial launch planned for 2005
Bright House	3.6 million homes passed	Trials in FL; commercial launch possible in 2004
Mediacom	2.8 million homes passed	Trials planned for 2004; commercial launch beginning in 2H04
Insight	2.3 million homes passed	Commercial launch planned for 2004
<i>Traditional CLECs and IXCs</i>		
AT&T	46 states (UNE-P)	Commercial service with local numbers available in 34 markets in AZ, CA, CO, MA, NJ, NY, OR, TX & WA as of May 2004 Plans to be in all “Top 100 MSAs by the end of 2004”
Covad	44 states	“[M]arket trials by mid-year with rollout of VoIP services by the fourth quarter of 2004.” Acquiring GoBeam with commercial service in CA and Chicago
McLeodUSA	25 states	Market trial in Chicago, Denver, Dallas, and Detroit planned for 2Q04
MCI	48 states & DC (UNE-P)	Commercial launch planned for 2004
Z-Tel	49 states (UNE-P)	Scheduled launch in Tampa and Atlanta in June 2004; expansion to peripheral markets such as Birmingham, Knoxville, and Orlando expected by August 2004
Cavalier (Phonom)	5 states	Commercial service since Jan. 2004; local numbers available in VA, MD, DE, eastern PA, and southern NJ
Cbeyond	GA, TX, CO	Commercial service in Atlanta, Dallas-Ft. Worth, Denver, Houston
FDN Comm. (Broadline)	FL, GA	Commercial service since Nov. 2003

Table 1. Deployment and Availability of VoIP Services		
	Mass-Market Service Area	Deployment Status
<i>New VoIP-Based Providers</i>		
Vonage	Nationwide	Commercial service since Mar. 2002; local numbers available in more than 1,900 active rate centers in 120 U.S. markets
voiceglo	Nationwide	Commercial service since Aug. 2003; local numbers available in more than 85 area codes in 22 states
VoicePulse	Nationwide	Commercial service since Apr. 2003; local numbers available in more than 55 area codes in 15 states & DC
Packet8	Nationwide	Commercial service since Nov. 2002; local numbers available in more than 1,900 rate centers in 44 states & DC
Nuvio	Nationwide	Commercial service since Jan. 2004; local numbers available in 24 states with availability in all states planned for 2004
Net2Phone	Nationwide	Commercial service since June 2001; local numbers available in 11 area codes in 6 states
Addaline	Nationwide	Commercial service with local numbers available in 27 area codes in 9 states
BroadVoice	Nationwide	Commercial service since Apr. 2004; local numbers available in more than 1,300 active rate centers in 26 states & DC
FuturaVoice	Nationwide	Commercial service with local numbers available in 132 area codes in 24 states & DC; availability in all states planned for 2004
iConnectHere	Nationwide	Commercial service since Aug. 2002; local numbers available in more than 45 area codes in 19 states & DC
ZipGlobal	Nationwide	Commercial service since Mar. 2004; local numbers available in more than 100 area codes in 23 states & DC
<i>Sources: See Appendix D.</i>		

Cable Operators. Since the beginning of 2004, each of the six major cable operators – whose networks reach 85 percent of U.S. households and serve 90 percent of all cable modem subscribers – has either begun commercial deployment of IP telephony service, or has announced plans to do so imminently. *See* Table 1.⁶ Many smaller cable operators have done so as well. *See* Table 1.

Analysts now predict that all major cable operators will offer cable telephony “to nearly 100% of their in-franchise homes over the next two to three years.”⁷ The smaller cable operators are expected to offer cable telephony to about two-thirds of their subscribers within that same

⁶ *See also* J. Halpern, et al., Bernstein Research Call, *US Telecom & Cable: Faster Roll-Out of Cable Telephony Means More Risk to RBOCs; Faster Growth for Cable* at 2 (Dec. 17, 2003) (“*Bernstein Cable Telephony Report*”) (“Nearly every major cable MSO has indicated over the past month that it will offer cable telephony service to every or nearly every household in its footprint by 2005, with Time Warner Cable and Cablevision targeting year-end 2004”); J. Hodulik, et al., UBS, *High-Speed Data Update for 3Q03: Competition Heats Up in Broadband* at 12 (Dec. 1, 2003) (“By the end of 2005/2006” four major “cable operators will have rolled out a cable telephony service across substantially all of their respective footprints, representing total homes of approximately 70 million.”).

⁷ *Bernstein Cable Telephony Report* at 1.

time frame.⁸ Analysts estimate that, within two years, 80 percent or more of U.S. households will be able to obtain IP telephony services from their cable operator.⁹

Cablevision was the first cable operator to deploy IP-based telephone service throughout its cable service territory. The company now offers VoIP to all 4.4 million cable homes that it passes in metropolitan New York, southern Connecticut, and New Jersey.¹⁰ Time Warner has deployed IP telephony in 16 markets, and is on track to deploy service to “essentially all” of its cable systems – which pass a total of almost 19 million homes – “by the end of 2004.”¹¹ Comcast offers circuit-switched voice service to more than 9 million homes and has told analysts it will have half of the 39 million homes it passes “VoIP ready” by year-end 2004 and 95-percent VoIP ready by year-end 2005.¹² Cox already offers circuit-switched voice service to more than half of the 10 million homes it passes, and has begun offering VoIP service in one of its other markets – Roanoke, Va – with plans to offer VoIP service in additional markets later this year.¹³ Charter plans to offer VoIP services in 2004 to at least one million of the 12 million homes it passes.¹⁴

Analysts project that cable operators will capture 10 percent of current residential lines by 2007,¹⁵ and over 15 percent by 2008.¹⁶ See Table 2. These projections may well prove to be conservative. Consumer surveys report very high interest in voice over broadband. In a recent

⁸ See *Bernstein Cable Telephony Report* at 4-5.

⁹ See, e.g., *Bernstein Cable Telephony Report* at 4 (estimating that cable operators will deploy VoIP to “roughly 82% of US households” by 2006); Kagan, *Cable VoIP Outlook: Q1 '04 Sector Update* at 17 (Jan. 2004) (estimating that cable VoIP will pass 80 percent of occupied households in 2006) (“*Kagan 1Q04 Cable VoIP Outlook*”).

¹⁰ See Cablevision News Release, *Cablevision Completes Network Rebuild* (Dec. 3, 2003).

¹¹ Time Warner News Release, *Time Warner Reports First Quarter 2004 Results* (Apr. 28, 2004); A. Breznick, *Cable MSOs Pick Up VoIP Pace, Shrug off Vonage*, *Comm. Daily* at 3 (May 24, 2004).

¹² John R. Alchin, Executive Vice President and Co-CFO, Comcast, Presentation to Bear Stearns Media, Entertainment and Information Conference at 16, 18 (Mar. 9, 2004), http://media.corporate-ir.net/media_files/irol/11/118591/presentations/cmcsa_030904/sld001.htm.

¹³ Cox News Release, *Cox Communications Brings Digital Telephone Service to Northern Virginia; Northern Virginia Marks Cox's 13th Telephone Market* (Apr. 30, 2004); Cox News Release, *Cox Communications Delivers Cox Digital Telephone to 12th Market; Roanoke, Va. Marks Cox's First Market Launch of VoIP Technology* (Dec. 15, 2003).

¹⁴ Mark Barber, VP of Corporate Telephony, Charter Communications, *Charter Voice-Over-IP Current Status and Future Plans*, presentation at the Banc of America Securities Voice over IP Conference at 4 (Apr. 14, 2004), http://media.corporate-ir.net/media_files/NSD/CHTR/presentations/chtr_041404.pdf; G. Campbell, et al., Merrill Lynch, *Everything over IP: VoIP and Beyond* at 17, 52 (Mar. 12, 2004) (“*Merrill Lynch, Everything over IP*”).

¹⁵ See, e.g., F. Governali, et al., Goldman Sachs, *Cable Telephony/VoIP Threat Evolves, But Shouldn't Be Catastrophic* at 1 (Apr. 16, 2004) (“*Goldman Sachs Cable Telephony/VoIP Analysis*”).

¹⁶ See, e.g., *Bernstein Cable Telephony Report* at 1 (“[W]e are raising our estimate of cable telephony subscribers from 10.4M by 2008 (off a 2003 base of 2.3 M) to 17.4 M. Our new outlook suggests that the cable MSOs will control 15.5% of the consumer primary access lines in the US by 2008, up from our previous estimate of 9.3%); see also F. Governali, et al., Goldman Sachs, *Telecom Services: Qualifying the VoIP Threat, an Eye-Opening Exercise* at 1 (Dec. 23, 2003) (“[W]e’ve been expecting the Bells to lose 20% to 30% consumer market voice share, as a result of the aggressive introduction of voice services by the cable industry over the next 5 to 7 years.”).

Gallup Poll, “[r]oughly 34% of respondents that do not have VoIP [said they] would switch from their existing landline service to VoIP for cost savings.”¹⁷ Some 30 percent of Time Warner’s cable modem customers in Portland – 10 percent of all homes in the city passed by cable – are now purchasing Time Warner’s VoIP service.¹⁸ In Roanoke, Cox Cable’s first VoIP market, Cox reports penetration ramping up as quickly as in markets where Cox offers circuit-switched service – markets in which Cox’s penetration now averages 20 percent and rises as high as 55 percent.¹⁹ Cablevision has been adding VoIP subscribers at a rate of 3,200 per week in the New York metropolitan area.²⁰

¹⁷ J. Hodulik, *et al.*, UBS, *Gallup Survey Highlights VoIP Potential* at 1 (Apr. 8, 2004); *see also, e.g.*, Michael K. Powell, Chairman, FCC, remarks at the National Association of Regulatory Commissioners General Assembly, Washington, DC (Mar. 10, 2004) (50 percent of Internet households are interested in switching to VoIP service); AT&T Customer Insights Group, *VoIP PR Research: Public Opinion on VoIP* at 12 (Jan. 2004) (“three out of four adults have heard of [VoIP] technology,” and “[a]mong current ‘non users’ aware of VoIP services, 76 percent would consider actually implementing the service in the next year, depending on the price and package offering.” Of that 76 percent of respondents, 63 percent would consider VoIP to replace a primary line); J. Barrett, *et al.*, Parks Associates, *Residential Voice-over-IP: Analysis & Forecasts* at Figure 5-20 (Jan. 2004) (53 percent of broadband households interested in VoIP were willing to switch service providers if a single company offered a telephone, TV, and Internet bundle; 77 percent were willing to switch for a monthly savings of \$10, and 85 percent were willing to switch for a monthly savings of \$20) (“*Parks Associates Residential VoIP Analysis*”); C. Moffett, *et al.*, Bernstein Research Call, *Cable and Telecom: Bernstein Study Finds Consumers Ready and Willing to Switch to Cable Telephony* (Dec. 9, 2003) (“26% of households . . . report a preference for their cable operator over their RBOC for voice telephony service even at no discount to their current rate. 51% of respondents report a preference for a cable telephony service over an equivalent RBOC offering if a 30% discount is offered by the cable operator.”).

¹⁸ *See* J. Shim, Tradition Asiel Securities Inc., *1Q04 Stat Pack: DBS and DSL Step on the Gas, While MSOs Point to FCF* at 5 (May 14, 2004).

¹⁹ *See* Chris Bowick, SVP Engineering & CTO, Cox Communications, *Cox Communications: Distribution at Its Best*, presentation at the Bear Stearns 17th Annual Media, Entertainment & Information Conference at 19 (Mar. 8, 2004); *Q1 2004 Cox Communications Inc. Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 042904as.714 (Apr. 29, 2004) (Pat Esser, Cox executive vice president & COO); M. Richtel, *Time Warner To Use Cable Lines To Add Phone to Internet Service*, N.Y. Times (Dec. 9, 2003) (“In Omaha, 45 percent of Cox’s cable customers now subscribe to its telephone service, and in Orange County, Calif., that figure is 55 percent.”); C. Moffett, *et al.*, Bernstein Research Call, *Cable and Telecom: Bernstein Study Finds Consumers Ready and Willing to Switch to Cable Telephony* (Dec. 9, 2003) (in Cox’s most mature circuit switched markets share is now approaching 35% of homes passed).

²⁰ *See* Cablevision News Release, *Cablevision Systems Corporation Reports First Quarter 2004 Results* (May 10, 2004).

		2003	2004	2005	2006
Circuit-Switched + VoIP	JP Morgan (Nov. 2003)	2.4 million	3.8 million	6.3 million	8.9 million
	Bernstein (Dec. 2003)	2.3 million	3.7 million	7.0 million	11.7 million
	Morgan Stanley (Jan. 2004)	2.3 million	3.1 million	4.6 million	6.4 million
	Frost & Sullivan (Jan. 2004)	3.3 million	4.2 million	6.1 million	7.7 million
	UBS (Mar. 2004)	2.4 million	3.1 million	4.4 million	5.8 million
	Merrill Lynch (Mar. 2004)	2.7 million	3.7 million	7.0 million	10.5 million
VoIP Only	JP Morgan (Nov. 2003)	0.0 million	1.0 million	3.0 million	5.3 million
	Kagan (Jan. 2004)	0.0 million	0.4 million	1.9 million	5.6 million

Sources: See Appendix D.

Traditional CLECs and Interexchange Carriers. Many traditional CLECs and IXC's have also begun deploying VoIP services, or have announced plans to do so. AT&T's new consumer strategy is to "migrate to [VoIP] and alternate access" so that it can "provide Local & Long Distance & Advanced Applications & Mobility – all on our own platform."²¹ AT&T has made a "commitment" to deploy mass-market VoIP service in the top 100 MSAs by the end of 2004²² and has already begun providing service in at least 34 of those markets.²³ AT&T projects it will have one million VoIP subscribers by the end of 2005.²⁴

MCI likewise plans to launch a consumer VoIP initiative in 2004.²⁵ Z-Tel has told investors it is "moving to VoIP from UNE-P,"²⁶ and is preparing for a VoIP launch in Tampa

²¹ John Polumbo, *President and CEO AT&T Consumer, AT&T Consumer Overview: Bending the Trends* at 11 (Feb. 25, 2004); Cathy Martine, SVP Internet Telephony & Consumer Product Management, AT&T, *Voice over IP* at 10 (Feb. 25, 2004).

²² Cathy Martine, SVP Internet Telephony & Consumer Product Management, AT&T, *Voice over IP* at 27 (Feb. 25, 2004).

²³ See AT&T News Release, *AT&T's CallVantage Service Expands To Serve the Western United States* (May 17, 2004).

²⁴ See *id.*

²⁵ See MCI Press Release, *MCI Provides 2004 Financial Guidance* (Jan. 22, 2004).

²⁶ Z-Tel Presentation for the Needham & Co. Sixth Annual Growth Conference (Jan. 2004), http://media.corporate-ir.net/media_files/NSD/ZTEL/presentations/0104.pdf; see also Z-Tel News Release, *Z-Tel to Launch Voice Over IP Services Delivering Enhanced Voice and Data Bundles to Small and Medium Businesses and Multiple Housing Units* (Feb. 9, 2004) (Z-Tel will "initially focus on the small-to-medium business market and multiple dwelling units (MDUs) such as condominiums, apartment buildings and hotels in Georgia and Florida.").

and Atlanta by June 2004.²⁷ Level 3 recently launched a wholesale service that provides carriers with all the building blocks needed to provide residential VoIP service; service is currently available in 50 U.S. markets, and will reach over 300 markets by the end of 2004.²⁸ Net2Phone has announced that it will use Level 3's wholesale service to expand the availability of its VoIP service over cable networks.²⁹ Many other CLECs are enthusiastically adopting VoIP technology as well. See Table 1.

New VoIP-Based Providers. New companies that do not offer traditional circuit-switched voice service at all were the first to grasp the competitive possibilities of VoIP. See Table 1. These new VoIP providers all offer service nationwide, and the larger providers now offer local telephone numbers in virtually all the markets they serve. See Table 1. Because they can allow customers to choose their own area code, the new VoIP providers can compete against both long-distance and terminating-end carriers as well; a VoIP phone physically located in New York can be set up with a San Francisco area code, thus displacing Verizon on the terminating end of calls originating out of region.³⁰

Vonage, the largest of the new providers, currently offers local numbers in more than 1,900 rate centers in approximately 120 U.S. markets.³¹ Vonage already serves at least 155,000 subscribers, and is adding "more than 20,000 lines per month to its network."³²

VoIP Software and Applications Providers. Additional competition comes from a number of VoIP providers that rely entirely on the public Internet and do not own or operate network facilities of their own. See Appendix C (containing a list of these providers and their service offerings).³³ Skype provides software that enables any user with a PC, sound card, microphone, and speakers to place free calls over the public Internet.³⁴ According to Chairman

²⁷ See Z-Tel Press Release, *Z-Tel Announces First Quarter 2004 Financial Results* (May 13, 2004) (quoting Z-Tel president and CEO Gregg Smith).

²⁸ See Level 3 Press Release, *Level 3 Launches Residential VoIP Service in More than 50 U.S. Markets* (May 3, 2004) ("Key features of (3)VoIP Enhanced local service include: Local and long distance calling including access to the PSTN; Local phone numbers; Operator assistance; Directory listings and assistance; E911 emergency services; Local number portability.").

²⁹ See Net2Phone Press Release, *Net2Phone Teams with Level 3 To Expand Cable VoIP Offerings* (May 3, 2004). Net2Phone has signed agreements to provide VoIP service for Bresnan Communications, with over 500,000 homes passed in Colorado, Montana, Wyoming, and Utah. See Net2Phone Press Release, *Bresnan Communications Selects Net2Phone as Provider for Cable Telephony Deployment* (May 13, 2004).

³⁰ See, e.g., Vonage, *Available Area Codes*, http://www.vonage.com/area_codes.php (customers are not "tied to [a] 'local area code.'"); G. Campbell, et al., Merrill Lynch, Investext Rpt. No. 7453992, *Voice over Broadband – The Challenge from VoIP in the Resident – Industry Report at *7* (June 24, 2003) ("*Merrill Lynch Voice over Broadband Report*").

³¹ See Vonage, *About Vonage: Fast Facts*, http://www.vonage.com/corporate/aboutus_fastfacts.php. Vonage plans to spend \$5 million in 2004 to expand to 50 states from 37. J. Hodulik, et al., UBS Investment Research, *The Vonage Story: The Who, What, Where, and How at 9* (Nov. 24, 2003) ("*UBS Vonage Story*").

³² Vonage Press Release, *Vonage Drops Residential Premium Unlimited Plan by \$5 to \$29.99* (May 17, 2004).

³³ See, e.g., Parks Associates *Residential VoIP Analysis* at 3-3, 3-4.

³⁴ Skype, *Home*, <http://www.skype.com/home.html>.

Powell, “the quality [of Skype’s service] is fantastic – and it’s free – it’s over. The world will change now inevitably.”³⁵ Skype reports that millions of customers have already downloaded its software.³⁶ Pulver.com allows “members” who register for its Free World Dialup service to place unlimited free calls to other registered members.³⁷ Pulver provides hardware that members may connect to their regular phones, as well as software that converts a PC into a “soft phone,” both of which also may be obtained from multiple suppliers.³⁸ As of December 2003, Free World Dialup members had placed an estimated 2 million VoIP calls representing over 1 billion minutes of use, and monthly volume continues to grow.³⁹ Other companies – like Net2Phone and InPhonex – offer similar, unlimited-free-calling soft-phone software, and also offer call termination on the PSTN at rates well below those offered for circuit-switched service and VoIP services over private IP backbones.⁴⁰ Net2Phone claims to “route[] millions of minutes daily over data networks.”⁴¹ As one analyst has noted, the competition provided by these services simply does not show up at all in the conventional metrics of competition: these Internet-enabled voice services can “substitute[] for calling occasions, even as they leave measured market share untouched.”⁴²

Bell Companies. The Bell companies are new entrants in the provision of VoIP service. To date, only two of the four Bell companies – Verizon and Qwest – have announced plans to deploy consumer VoIP services. In December 2003, Qwest began providing consumer services on a limited basis in Minnesota;⁴³ the company plans additional deployments in 2004.⁴⁴ Verizon will begin rolling out VoIP services in the second quarter 2004, targeting DSL users and the consumer market.⁴⁵ Verizon and Qwest – as well as BellSouth and SBC – will also provide IP-based services – including IP VPN services, IP Centrex services, and Hosted IP services – to

³⁵ D. Roth, *Catch Us If You Can*, Fortune (Feb. 9, 2004).

³⁶ See Skype News Release, *Skype Hits 10 Million Downloads* (Apr. 8, 2004) (As of April 2004, Skype’s software had been downloaded more than 10 million times).

³⁷ See Pulver, *About Free World Dialup*, <http://www.freeworlddialup.com/content/view/full/895/>; *Parks Associates Residential VoIP Analysis* at 4-12.

³⁸ See Pulver, *Free World Dialup*, <http://www.pulver.com/fwd/>.

³⁹ See Nextone Communications Press Release, *Free World Dialup Powered by Nextone Session Controllers* (Dec. 17, 2003).

⁴⁰ See *Parks Associates Residential VoIP Analysis* at 4-9; InPhonex, *Products and Services*, <http://www.inphonex.com/products/products.php>.

⁴¹ Net2Phone, *About Net2Phone: Company Overview*, <http://web.net2phone.com/about/company/>.

⁴² J. Halpern, et al., Bernstein Research, *U.S. Telecom and Cable: Flat-Rate Pricing Signals Telephony Voice ARPU Compression* at 4 (Apr. 8, 2004) (“Bernstein Flat-Rate Pricing Note”).

⁴³ See Qwest Press Release, *Qwest Communications is First Major Telecom Company to Provide Voice Over Internet Protocol Services to Customers* (Dec. 10, 2003); *Qwest Reports Profit, Says It Will Offer VoIP in Dec. in Minn.*, Comm. Daily (Nov. 20, 2003).

⁴⁴ See *Qwest Holder Proposals on Board Independence Lose Steam*, Dow Jones Newswires (May 25, 2004) (At a recent Qwest annual shareholders meeting, CEO Richard Notebaert “highlighted Qwest’s efforts in voice-over-Internet protocol, or VOIP, service. The company plans to reach 12 markets out of its 14-state service region by the end of this year, he said, without naming the markets.”).

⁴⁵ See Verizon Communications, Form 8-K (SEC filed Nov. 19, 2003).

enterprise customers.⁴⁶ The switches and software used to provide VoIP services are quite different from those used in legacy circuit-switched networks, and Bell companies thus start out with no competitive edge in the provision of new VoIP services.

B. Price, Service Quality, and Functionality

Voice-over-IP services are now competitive with those available over traditional circuit-switched networks, and in most cases are cheaper and provide more features and functionality.

1. Economics of Providing VoIP Service

Although VoIP services are in their infancy, they may already be economically provided to the vast majority of mass-market customers, and costs are dropping rapidly. As the following analysis demonstrates, VoIP services can be economically provided not only to customers who already have a broadband connection, but also to those who do not.

VoIP for Existing Broadband Subscribers. About 24 million customers – 22 percent of U.S. households – currently subscribe to broadband service; 30 percent will by the end of 2004, and almost 40 percent by the end of 2005.⁴⁷ For these households, the *incremental* capital cost of adding VoIP service is low according the cable companies and VoIP-only service providers who offer VoIP services to these customers.

The principal incremental equipment-related capital cost of adding VoIP service for a customer who already has a broadband connection is for relatively inexpensive CPE and call-management network equipment.⁴⁸ The CPE consists of an analog-to-digital phone adapter and

⁴⁶ See Verizon News Release, *Verizon Puts New National Backbone to Work with Launch of IP-Based Virtual Private Network Service* (May 10, 2004) (“Verizon has launched long-haul Internet protocol virtual private network (IP-VPN) service to support its largest business, education and government customers.”); Qwest Press Release, *Baan Chooses KPNQwest for New Global IP-VPN Network* (Nov. 23, 1999) (announcing provision of IP-VPN service); BellSouth News Release, *BellSouth Launches Network VPN Services, Providing Innovative IP Networking Capabilities for Businesses* (Mar. 24, 2003) (“BellSouth announced today that it is launching BellSouth Managed Network VPN Service to provide state-of-the-art data networking capabilities to business customers.”); BellSouth News Release, *BellSouth Expands Voice over IP Portfolio to Include Centrex IP with Advanced New Features for Businesses* (May 13, 2004) (“BellSouth announced today the availability of BellSouth Centrex IP Service throughout the Southeastern markets served by the company.”); SBC News Release, *SBC Communications Introduces IP Product Portfolio to Serve Enterprise Customers Nationwide* (Nov. 20, 2003) (announcing introduction of new hosted VoIP product, SBC PremierSERV(SM) Hosted IP Communication Service (HIPCS)(1), that provides advanced features such as unified messaging for voice mail and e-mail, ability to forward calls to a mobile phone, remote office, or another extension, one-click calling from a phone set or PC Web browser, and conference call set-up from an Internet browser. “SBC PremierSERV HIPCS is available in select markets today, and will be available in cities nationwide by the end of 2004.”); SBC News Release, *SBC Communications Delivers New Options for Businesses To Incorporate Secure IP Features into Traditional Phone Systems* (Feb. 17, 2004) (“SBC Communications Inc. today announced new business service options that allow companies to add secure IP features and services to their existing voice infrastructure.”).

⁴⁷ See Appendix A at A-7.

⁴⁸ See, e.g., F. Governali, *et al.*, Goldman Sachs, *VoIP – The Enabler of Real Telecom Competition* at 27 (July 7, 2003) (“No network build is required other than placing gateways and securing PSTN interconnection in the particular location.”) (“*July 2003 Goldman Sachs VoIP Report*”); Tom Rutledge, President, Cable & Communications, Cablevision, Cablevision Presentation at the Bear Stearns Media & Entertainment Conference at 46 (Mar. 9, 2004) (“*Rutledge/Cablevision Presentation*”).

(optionally) a battery for backup power. The adapter encodes the analog signal from an ordinary telephone as Internet-Protocol (IP) digital packets, and dispatches them to the router and modem.⁴⁹ Cablevision puts the current incremental cost of the adapter at \$23;⁵⁰ analysts see costs “dropping rapidly,”⁵¹ and “expect a steep and continued decline . . . as the segment picks up considerable momentum.”⁵² A backup battery is not needed in any household that can rely on a wireless phone during a power outage, but in any event, a battery can readily be bundled with the adapter, and at least some cable operators plan to do just that.⁵³ According to Time Warner, battery backup currently costs about \$50 per subscriber;⁵⁴ that price is projected to drop to \$10-\$20 within 18-24 months.⁵⁵

Most of the customers currently signing up for VoIP service install the CPE themselves, at no cost to the provider; no major provider sees self-installation as likely to deter customer acceptance of the service.⁵⁶ Cablevision, the cable operator with the largest VoIP deployment to date, estimates that a one-time service call for the (few) customers who do not install CPE themselves costs \$66.⁵⁷

VoIP service also requires a “softswitch” or “call management server” in the network to establish, route, and terminate calls, manage call quality, provide vertical services such as caller ID and voice mail, and handle billing. Softswitches are much smaller and less expensive than ILEC circuit switches⁵⁸ – Cablevision puts the cost at \$44 per customer, while Time Warner

⁴⁹ These devices also are known as an Analog Telephone Adapter (ATA), Multimedia Terminal Adapter (MTA), or Digital Phone Adapter. The adapter can either be a stand-alone device, or its functionality can be incorporated directly in the modem. When built into the modem, it is known as an embedded MTA (E-MTA).

⁵⁰ See *Rutledge/Cablevision Presentation* at 46.

⁵¹ *Merrill Lynch Voice over Broadband Report* at *30.

⁵² *Kagan 1Q04 Cable VoIP Outlook* at 5.

⁵³ See, e.g., Cox Communications, *Whitepaper: Voice over Internet Protocol: Ready for Prime Time* at 13 (May 2004) (Cox provides back-up battery power in Roanoke).

⁵⁴ See Glenn Britt, Chairman & CEO, Time Warner Cable, Presentation to UBS Media Week Conference at slide 26 (Dec. 11, 2003) (“*Britt/Time Warner Cable Presentation*”).

⁵⁵ N. Gupta, *et al.*, Citigroup Smith Barney, *Cablevision Systems (CVC)* at 4 (Dec. 12, 2003).

⁵⁶ See, e.g., *UBS Vonage Story* at 3 (Vonage “does not require a truck roll to initiate service”); Transcript of AT&T Analyst Day (Feb. 25, 2004) (quoting Cathy Martine) (“[t]here is no truck roll”); D. Iler, *AT&T Paves Last Mile with VoIP*, Multichannel News at 39 (Mar. 1, 2004) (quoting Cathy Martine, SVP of Product Management, AT&T Consumer: installation takes only “about 10 minutes.”).

⁵⁷ See *Rutledge/Cablevision Presentation* at 46 (“Truck Roll: \$66”); see also V. Vittore, *Cablevision Gets Cocky*, TelephonyOnline.com (Dec. 12, 2003) (“85% of Cablevision’s data customers do self-installation, and the company is planning on moving to that model for voice soon”).

⁵⁸ See, e.g., *Britt/Time Warner Cable Presentation* at slide 26 (“VoIP is over 50% cheaper than traditional circuit switched architecture.”); Chris Bowick, SVP, Engineering and CTO, *Distribution at Its Best: Cox Digital Telephone: The Voice of Experience*, Cox presentation at the Bear Stearns 17th Annual Media, Entertainment & Information Conference at 21 (Mar. 8, 2004) (“Expected CapEx per customer” of \$590/sub for circuit switched vs. \$330/sub for VoIP); C. Carr, *et al.*, CIBC World Markets, *Comcast Is Best Defense If RBOCs Take the Offensive* at 6, Exhibit 2 (Dec. 5, 2003) (estimating costs per subscriber at \$568 for circuit-switched telephony, but \$152-\$375 for premises-powered VoIP).

estimates \$50.⁵⁹ Vonage, which uses much cheaper servers,⁶⁰ puts its switch costs at just \$1 to \$2 per customer.⁶¹ The cost of both options is falling steadily.⁶² A VoIP provider also pays a one-time fee of about \$15 to port a customer's existing telephone number to its switch, or about \$1 to obtain a new telephone number.⁶³

In sum, the total one-time, equipment-related capital cost for a cable operator to add VoIP service to its existing broadband network is under \$200 per customer, and under \$150 for customers who don't need a service call or battery backup. The costs for VoIP-only providers like Vonage, which use less expensive equipment, are below \$75 per subscriber.⁶⁴ If just these equipment-related capital costs are amortized over 36 months,⁶⁵ at the current discount rate, these numbers translate into \$6 and \$4 per month for cable-supplied VoIP, or as little as \$2 per month for Vonage-type service.

Subscriber acquisition costs are ordinarily booked as capital expenditures as well. These one-time costs are currently estimated at an average of about \$125⁶⁶ – or about \$3.50 per month

⁵⁹ See *Rutledge/Cablevision Presentation* at 46 (price per port on soft switch: \$44); *Britt/Time Warner Cable Presentation* at slide 26 (softswitch & gateway cost per sub: \$50). See also *November 2003 In-Stat/MDR Cable Triple-Play Report* at 21, Figure 7 (estimating \$45 per line for the softswitch).

⁶⁰ See, e.g., *Merrill Lynch Voice over Broadband Report* at *47 (Due to Vonage's use of the SIP protocol, "[c]all connections made are effectively on a peer to peer basis (rather than via a softswitch or conventional switch)."); D. Iler, *AT&T Paves Last Mile with VoIP*, *Multichannel News* at 39 (Mar. 1, 2004) ("the Vonage SIP network does not use a soft switch, like the PacketCable VoIP standard, but relies on servers placed along the network or within customer-premises equipment to perform soft-switch functions.").

⁶¹ See, e.g., *UBS Vonage Story* at 9 ("[Vonage] has 25 regional data centers where its voice gateways, routers, and blade servers reside. The company estimated that its equipment costs per data center run about \$100-200K for 100-200K customers.").

⁶² See, e.g., M. Paxton, *InStat/MDR, Cable Telephony Service: The Third Leg of Cable's 'Triple Play' Bundle*, Report No. IN030711MB at 35 (Nov. 2003) ("As the bigger telecommunications carriers started to deploy softswitches, they also started to demand that the products function more like Class 5 switches in terms of scalability and functionality, but be less expensive and more capable To a certain extent, the industry's leading softswitch vendors are meeting these demands.").

⁶³ See Q. Hasan, Utendahl, *Vonage-Telecom Services: VoIP* at 7 (Nov. 4, 2003).

⁶⁴ Cf. *Merrill Lynch, Everything over IP* at 16 ("[Vonage] Founder Jeffrey Citron confirmed that our cost estimate of US \$50 per new subscriber (excluding marketing expenses) was 'close.'").

⁶⁵ See *Merrill Lynch Voice over Broadband Report* at *28, Table 5 (assuming 2.5% churn for VoIP); see also, e.g., D. Barden, *et al.*, Banc of America Securities, *Straight Talk on VoIP* at 2 (Apr. 15, 2004) (Vonage's "churn is about 2.4%"); *UBS Vonage Story* at 7 ("customers that have been with Vonage for six months have a churn rate of 2.1%. This drops to 1.8% for customers that are over one-year old. Over a 2-3 year cycle Vonage expects to see blended churn come down to about 1.5%."); Frost & Sullivan, *North America IP Cable Telephony Market; Is Cable Able?*, Market Insight Report #6917-61 at 7 (Jan. 2004) ("Bundling of services works – offering two services reduces churn from a single service, and offering three reduces churn even further.").

⁶⁶ *Merrill Lynch Voice over Broadband Report* at *28, Table 5 (estimating "marketing and installation expenses of between \$75 and \$125" for cable IP telephony); D. Barden, *et al.*, Banc of America Securities, *Straight Talk on VoIP* at 2 (Apr. 15, 2004) (reporting that Vonage's subscriber acquisition cost is "only \$170, and declining"); S. Donohue, *Ops Call on Vonage*, *Multichannel News* at 42 (Mar. 8, 2004) (Vonage vice president of MSO and cable sales Phil Giordano estimates subscriber acquisition costs total about \$130 per subscriber); J. Enck, Daiwa Institute of Research, *Eurotelcorama* at 4, 7 (Nov. 3, 2003) ("the estimated cost to build one center (routers, voice gateway and servers, along with associated admin expenses) is under \$200,000 per site." Vonage's "average cost of customer acquisition (CAC) has diminished substantially since the service launched in April 2002, and

when amortized using the same methodology. Factoring in these costs brings the total incremental capital costs up to between \$7-\$9 per month for cable-supplied VoIP, or as little as \$5 per month for Vonage-type service. In other words, based on these providers' own cost estimates, the incremental cost to add VoIP for a customer that already has a broadband connection is on the order of \$5-\$9 per month.⁶⁷

Current prices and profit margins reflect the low costs of providing VoIP services. VoIP providers are now offering service at considerable discounts from circuit-switched service. As Table 3 demonstrates, VoIP service is typically priced 30-40 percent or more below comparable circuit-switched offerings.⁶⁸ In New York, for example, AT&T offers VoIP service for \$40 per month, compared to \$55 per month for its comparable UNE-P-based offering. *See* Table 3; *see also* Appendix B (describing VoIP offerings in major markets). Moreover, AT&T and other VoIP providers also are now offering significant promotional discounts to attract new subscribers.⁶⁹ Vonage just lowered the price of its most popular package from \$35 to \$30.⁷⁰

Even at these low rates, VoIP providers are reporting large profit margins. Cablevision estimates its margins at 40-45 percent, with a capital payback of 10 months.⁷¹ Vonage reports margins of 70 percent, headed to 80 percent.⁷² Kagan estimates that cable operators will have

management see the CAC moving down further to a sustainable level of approximately \$100 over the next two years.”); Q4 2003 Earthlink Conference Call, FD (Fair Disclosure) Wire (Jan. 27, 2004) (Earthlink, which offers VoIP through a partnership with Vonage, announced “blended subscriber acquisition cost in the current quarter was \$126 per gross organic subscriber addition.”).

⁶⁷ *Cf. Cable and Telecom Pinning Their Hopes on VoIP*, Comm. Daily at 5 (Feb. 11, 2004) (“Precursor’s Scott Cleland said his analysts calculated that VoIP cost 1/50th the capital expenditures outlays of traditional service.”); A. Wahlman, *et al.*, Needham & Company, *The Dumb Pipe Is the Only Money Pipe* at 3 (Dec. 15, 2003) (Costs of voice over broadband “are 1/1000th or less of what it costs the Bells to build their circuit-switched local access infrastructure in the United States.”); J. Hodulik, *et al.*, UBS, *First Quarter 2004 Preview: The Calm Before the Storm* at 5 (Apr. 13, 2004) (“IP-based voice infrastructure (servers, routers, softswitches, back-up) costs a fraction of the cost of traditional TDM infrastructure.”).

⁶⁸ *See generally Bernstein Flat-Rate Pricing Note* at 3 (“By entering with pricing that is 30%+ below prevailing RBOC rates, cable operators are setting benchmarks that will be difficult for incumbent telcos to match.”).

⁶⁹ *See, e.g.*, AT&T, *CallVantage*, <http://www.usa.att.com/callvantage/home.jsp?> (AT&T offers consumers that sign up before June 30 a \$20 discount each month for the first six months); VoicePulse, *Plans*, <http://www.voicepulse.com/plans/default.aspx> (VoicePulse offers a savings of \$120 for the first year with a one-year contract); *This Just In: Circuit City Dials Vonage for VoIP Phone Service*, Multichannel News (Mar. 8, 2004) (Circuit City offers customers two months of free service and activation when they purchase starter kits and sign up for Vonage service).

⁷⁰ Vonage Press Release, *Vonage Drops Residential Premium Unlimited Plan by \$5 to \$29.99* (May 17, 2004).

⁷¹ *See, e.g., Rutledge/Cablevision Presentation* at 47.

⁷² *See* D. Barden, *et al.*, Banc of America Securities, *Straight Talk on VoIP* at 2, 5 (Apr. 15, 2004).

cash flow margins of 40 percent for their VoIP services.⁷³ Wall Street analysts are making similar projections.⁷⁴

**Table 3. VoIP vs. Circuit-Switched Telephony:
Comparison of Bundled Local/Long-Distance Service Offerings**

	Circuit-Switched			VoIP				Wireless**
	BOC	Cable	UNE-P	AT&T	Vonage	Other*	Cable	
New York, NY	\$60 Verizon		\$55 AT&T	\$40	\$30	\$20	\$35 Cablevision	\$40
Los Angeles, CA	\$49 SBC	\$49 Comcast	\$40 MCI	\$40	\$30	\$20		\$40
Dallas, TX	\$49 SBC	\$50 Comcast	\$49 AT&T	\$40	\$30	\$20		\$40
Houston, TX	\$49 SBC		\$49 AT&T	\$40	\$30	\$20		\$40
Boston, MA	\$55 Verizon	\$49 Comcast	\$50 AT&T	\$40	\$30	\$20		\$40
San Francisco, CA	\$49 SBC	\$50 Comcast	\$40 MCI	\$40	\$30	\$20		\$40
Phoenix, AZ	\$46 Qwest	\$45 Cox	\$44 AT&T	\$40	\$30	\$20		\$40
Seattle, WA	\$46 Qwest	\$50 Comcast	\$44 AT&T	\$40	\$30	\$20		\$40
San Diego, CA	\$49 SBC	\$49 Cox	\$40 MCI	\$40	\$30	\$20		\$40
Denver, CO	\$46 Qwest	\$50 Comcast	\$50 MCI	\$40	\$30	\$20		\$40
Kansas City, MO	\$50 SBC		\$49 AT&T		\$30	\$20	\$40 Time Warner	\$40
San Jose, CA	\$49 SBC		\$40 MCI	\$40	\$30	\$20		\$40
Charlotte, NC	\$55 BellSouth		\$55 AT&T		\$30	\$20	\$40 Time Warner	\$45 ALLTEL
Bridgeport, CT	\$55 SBC		\$56 MCI		\$30	\$20	\$35 Cablevision	\$40
Raleigh, NC	\$55 BellSouth		\$55 AT&T		\$30	\$20	\$40 Time Warner	\$45 ALLTEL
Portland, ME	\$55 Verizon		\$55 AT&T			\$30 voiceglo	\$40 Time Warner	\$40
Roanoke, VA	\$50 Verizon		\$50 AT&T		\$30	\$20	\$50 Cox	\$40

*Packet8, unless otherwise noted. **T-Mobile, unless otherwise noted.

Qwest pricing assumes a maximum expenditure of \$20 for long-distance calls. Time Warner pricing assumes subscription to high-speed Internet and digital cable services.

Sources: See Appendix D.

⁷³ See Kagan *1Q04 Cable VoIP Outlook* at 9.

⁷⁴ See, e.g., *Merrill Lynch, Everything Over IP* at 17 (“We believe that margins on VoIP service could be very high (depending on where pricing and regulation end up) . . . For cable operators, we believe that incremental service margins on VoIP can be comparable to HSD service margins (i.e., 60%+plus at scale, assuming current pricing) and significantly better than cable TV margins.”).

VoIP for Most Mass-Market Customers. For customers who do not already subscribe to broadband service, it is necessary to factor the cost of that service into the analysis. It is also necessary to take into account the fact that the typical U.S. household already purchases, in addition to basic local voice service, some mix of vertical services, long-distance service, second lines, and dial-up Internet access, all of which can be displaced with a VoIP-equipped broadband connection. As demonstrated below, the price for a broadband connection and VoIP service already is comparable to the market price for circuit switched bundled service offerings.

The average retail price of stand-alone broadband service (*i.e.*, not bundled with another service, but including full Internet access) is approximately \$46 per month.⁷⁵ For the 67 percent of U.S. households that subscribe to cable video service,⁷⁶ the average price is \$43.⁷⁷ The average price is further lowered by the promotional offerings that broadband providers now routinely offer (*see* Appendix A at Table 4). Credit Suisse First Boston reports that the average user of cable modem service generates only \$39 per month of additional revenue for the cable operator.⁷⁸

According to the most recent data available from the FCC, by contrast, the average household spends \$48 per month for local and long distance services – \$36 per month for local, and \$12 per month for long distance.⁷⁹ This total appears to include contributions for the SLC and Federal Universal Service Fee; the average amount spent on vertical services, second lines, access charges, and intraLATA toll services; and taxes. Consistent with the FCC’s reported average, most wireline providers now offer bundles of service for approximately \$55-60 (including the \$6 SLC), which include unlimited local and long distance service plus a number of vertical features. *See* Table 3.

⁷⁵ See J. Atkin, RBC Capital Markets, *Cable/RBOC/DBS: Telephony, Data, and Video Pricing Comparisons*, at Exhibit 2 (Feb. 3, 2004) (estimating \$50 for cable broadband and \$42 for DSL).

⁷⁶ See NCTA, *Industry Overview: Statistics & Resources*, <http://www.ncta.com/Docs/PageContent.cfm?pageID=86>; J. Halpern, *et al.*, Bernstein Research Call, *Broadband Update: DSL Share Reaches 40% of Net Adds in 4Q . . . Overall Growth Remains Robust* at Exhibit 1 (Mar. 10, 2004)

⁷⁷ Merrill Lynch, *Everything over IP* at Table 2.

⁷⁸ See L. Warner, *et al.*, Credit Suisse First Boston, *The Broadband Battle: DSL Prepares To Overtake Cable Net Add Share* at Exhibit 11 (Apr. 20, 2004) (“*Credit Suisse, The Broadband Battle*”).

⁷⁹ Ind. Anal. & Tech. Div., Wireline Competition Bureau, FCC, *Trends in Telephone Service* at Table 3.2 (May 2004); *see also* A. Quinton, *et al.*, Merrill Lynch, *The Telecommunicator: Telecom Act Seven Years On – The UNE Shock Wave Belatedly Reverberates Around the RBOCs – and How!* at 17 & Table 2 (Sept. 23, 2002) (estimating average expenditures of \$12 for InterLATA toll, \$2 for intraLATA toll, \$2 for access charges, \$8.50 for vertical services).

These totals do not, however, include the \$22 per month that some 36 million U.S. households⁸⁰ (32 percent) pay for dial-up Internet access services.⁸¹ Some part of that is for proprietary content, but the lowest-cost, barebones ISP service still runs about \$10 per month.⁸²

An analysis based on these current prices establishes that the existing prices for a VoIP equipped broadband connection are comparable to a circuit switched bundled service offering. *See* Table 4. A broadband connection equipped with VoIP service now sells for between \$72 and \$90 per month – \$42-\$50 for the broadband service, plus \$30-\$40 for VoIP service that includes unlimited local and long distance services plus vertical features. *See* Table 3.⁸³ Comparable narrowband voice bundles are priced at between \$60 and \$82 per month – \$50-\$60 for the voice component (including the \$6 SLC), *see* Table 3, plus \$10-\$22 per month for dial-up Internet access.⁸⁴ But taxes are considerably higher for narrowband service than for VoIP – a difference of at least \$5.45 per month, according to Goldman Sachs.⁸⁵ Taking into account these additional charges, the price of VoIP-equipped broadband is comparable to and often lower than the price of conventional service, and in no case more than a few dollars higher, even before taking into account the promotional discounts that are widely offered for both broadband and VoIP service. One recent study concluded that the average narrowband household could capture a net savings of \$8 per month by subscribing to broadband and migrating to VoIP service.⁸⁶

⁸⁰ *See* R. Bilotti, *et al.*, Morgan Stanley, *Broadband Update – Tiering Strategies* at Exhibit 10 (Apr. 12, 2004) (excluding dial-up subscribers that also use broadband).

⁸¹ *See, e.g.*, MSN, EarthLink, and SBC Yahoo! charge \$21.95 per month for dial-up service. MSN, *MSN 9 Dial-Up*, <http://join.msn.com/?page=dept/dialup&pgmarket=en-us&ST=1&xAPID=1983&DI=1402>; Earthlink, *Earthlink Dial-Up Internet Access*, <http://www.earthlink.net/home/dial/>; SBC Yahoo! Dial, *SBC Yahoo! Dial: Getting Started*, http://promo.sbcglobal.net/sbcyahoo_myhome/. AOL charges \$23.90 for dial-up service. AOL, *Price Plans*, http://www.aol.com/price_plans/index.adp. United Online (which includes NetZero, Juno, and BlueLight) charges \$9.95, with \$14.95 for high-speed dial-up service. United Online, *United Online Home*, <http://www.unitedonline.net/>.

⁸² Netscape, *Netscape FAQ*, http://www.getnetscape.com/more_info.adp?promo=NS_2_11_8_2003_12_1; PeoplePC, *PeoplePC Online Details*, http://www.peoplepc.com/connect/ppc_online.asp; *March 2004 Bernstein Broadband Update* at Exhibit 5.

⁸³ *See, e.g.*, AT&T, *CallVantage*, <http://www.usa.att.com/callvantage/home.jsp?> (AT&T offers consumers that sign up before June 30 a \$20 discount each month for the first six months); VoicePulse, *Plans & Pricing: No Hidden Fees*, <http://www.voicepulse.com/plans/fees.aspx> (VoicePulse offers a savings of \$120 for the first year with a one-year contract).

⁸⁴ *Cf.* J. Barrett, *et al.*, Parks Associates, *VoIP: At Last a Killer App?* at Figure 2-2 (Jan. 2004) (estimating that average telecommunications expenditure by U.S. household that subscribes to narrowband Internet access is \$94 per month).

⁸⁵ *See Goldman Sachs Cable Telephony/VoIP Analysis* at 24 (estimating “avoided connection fees for VoIP providers” at \$5.45, which includes federal USF contribution, LNP, E911, state telecommunications relay, federal excise tax, and utility user tax); *see UBS Vonage Story* at 3 (voice over broadband providers benefit from having “much lower taxes,” whereas “regulatory fees and other taxes [] typically increase the price for the Bells by \$10-\$15.”); Vonage, *Top Questions*, http://www.vonage.com/learn_center.php (Vonage subscribers incur no more than \$2.55 to cover the Federal excise tax and regulatory recovery fee; customers in New Jersey are also charged a state sales tax); Optimum Voice, <http://www.optimumvoice.com/index.jhtml> (Cablevision’s VoIP service is priced at “\$34.95, all inclusive”).

⁸⁶ *Parks Associates: VoIP Key to Boosting Broadband Adoption*, Business Wire (Feb. 10, 2004).

Service	Circuit-Switched		VoIP		
	BOC	Cable	Cable	Vonage	Other
Voice*	\$50 - \$60	\$50	\$35 - \$40	\$30	\$30 - \$40
Internet Access	\$10 - \$22		\$42	\$42 - \$50	
Taxes/Fees/Surcharges*	\$5.50 - \$13+		\$0 - \$5	\$2 - \$4	\$0 - \$5
Total	\$62 - \$95	\$65 - \$85	\$76 - \$87	\$74 - \$84	\$62 - \$95
*Assumes unlimited local, local toll, and long-distance calling. See Table 3 & Appendix B. Sources: See Appendix D.					

The foregoing comparison is conservative because it uses the average retail *price* of both VoIP service and the underlying broadband service. As demonstrated above, however, the average incremental costs of providing VoIP service for a cable operator or a VoIP-only provider are significantly below these current retail prices. An analysis based on these costs, rather than current prices, proves even more conclusively that it is economical to provide VoIP service to most households today. The average household currently spends from \$58 to \$70 per month on voice and dial-up Internet service together. For most households, this is more than enough to cover the \$46 average price of broadband service and recover the cost of providing VoIP service. Moreover, as demonstrated above and in Appendix A, the cost of providing VoIP service is dropping quickly.⁸⁷ And VoIP providers already are testing alternative, lower pricing plans. For example, in Roanoke, Va., Cox now offers “Basic Line” – barebones, local, VoIP service – for \$13.59 per month to non-broadband subscribers; or \$12.20 for customers that subscribe to certain video service packages.⁸⁸

2. *Quality/Functionality*

Given that VoIP service costs considerably less, many consumers would likely substitute VoIP for circuit-switched service even if there was some difference in quality or functionality.⁸⁹ But as industry analysts, competitive carriers, and equipment vendors now uniformly agree, VoIP provides comparable or superior quality and functionality to conventional circuit-switched service. See Table 5.⁹⁰

⁸⁷ See, e.g., A. Shah et al., Morgan Stanley, *Voice-over-IP Conference Highlights* at 3 (May 20, 2004) (“Given the very high margins on VoIP, aggressive promotions can be supported without increasing deficits.”).

⁸⁸ Cox, *Digital Telephone, Roanoke, Pricing*, <http://www.cox.com/roanoke/telephone/pricing.asp>.

⁸⁹ See, e.g., J. Hodulik, et al., UBS, *Gallup Survey Highlights VoIP Potential* at 1 (Apr. 8, 2004) (“Roughly 34% of respondents that do not have VoIP would switch from their existing landline service to VoIP for cost savings. Respondents appear more willing to sacrifice quality than reliability.”); J. Halpern, et al., Bernstein Research Call, *SBC & BLS: Cutting Estimates on Cingular-AWE Deal Dilution* at 6 (Feb. 25, 2004) (“Our previous research has shown that consumers exhibit a high willingness to switch telephony providers, even with a sacrifice in quality, provided they are offered a significant discount.”).

⁹⁰ See also *VoIP NPRM* ¶ 11 (“According to many industry watchers, [VoIP] technology has now overcome prior quality and reliability concerns.”).

Table 5. Universal Agreement That VoIP Quality Is Comparable to or Better Than PSTN

VoIP Providers	
AT&T	“Works just like your home phone – only better.”
Cablevision	“[C]risp, clear digital voice service all the time.”
Cox	“[E]xcellent voice quality that meets today’s telecommunication standards. . . . crystal-clear connections.”
Time Warner	“[Q]uality will be certainly equal to the RBOC quality. “ “Feels just like conventional telephone service.”
Vonage	“98% of our customers experience quality of the call that’s equivalent to the quality they get on their POTS service.”
Investment Analysts	
Bernstein	“[T]he sound quality for VoIP via cable is likely to be indistinguishable from that of a traditional circuit switched RBOC voice call.”
Goldman Sachs	“VoIP on a managed network can reach or even exceed the quality level of the PSTN.”
Merrill Lynch	“It now appears possible to deliver high-quality phone service at very low cost via existing broadband connections.”
Equipment Suppliers	
Cisco	“[R]eliability, and voice quality of the global switched telephone network.”
Nortel	“PSTN-equivalent voice quality and service richness”
Motorola	“[M]eet[s] the reliability and availability demands of primary -line voice applications.”
<i>Sources: See Appendix D.</i>	

The first generation of VoIP services depended on first-come, first-served switching and routing of packets.⁹¹ When network traffic was heavy, voice packets waited in line along with data; short delays that were of little consequence for e-mail or Web browsing could seriously degrade the quality of a two-way voice conversation. Most of these early services also required customers to make their voice-over-Internet phone calls through microphones and speakers connected to their computers, or to deploy cumbersome CPE.⁹²

Today, however, vendors are manufacturing equipment that incorporates quality-of-service (“QoS”) standards and protocols, and other functionality to place VoIP on par with traditional telephone service.⁹³ Analog-to-digital adapters built to the PacketCable standard that most cable operators now implement were certified in December 2002;⁹⁴ PacketCable call

⁹¹ See, e.g., K. Werbach, Office of Plans and Policy, FCC, *Digital Tornado: the Internet and Telecommunications Policy*, OPP Working Paper No. 29 at 36 (Mar. 1997) (“These services work by converting voices into data which can be compressed and split into packets, which are sent over the Internet like any other packets and reassembled as audio output on the . . . receiving end.”).

⁹² See, e.g., *Federal-State Joint Board on Universal Service*, Report to Congress, 13 FCC Rcd 11501, ¶¶ 86-90 (1998); *July 2003 Goldman Sachs VoIP Report* at 4.

⁹³ See, e.g., Cable Datacom News, *Cable IP Telephony Primer* (Jan. 15, 2003); Motorola, *Using PacketCable QoS To Deliver Carrier-Class Telephony Services* at 4 (Nov. 11, 2003) (“Platforms that are graded as PacketCable 1.0 qualified by CableLabs technical staff have passed rigid interoperability and certification testing, and they allow operators to build telephony infrastructure that enables end-to-end QoS control.”).

⁹⁴ See CableLabs Press Release, *PacketCable Marks Cable Milestone with Certification of First VoIP Devices* (Dec. 20, 2002); see also CableLabs, *PacketCable Certified E-MTA Products* (current as of Nov. 14, 2003), http://www.packetcable.com/downloads/Certified_Products.pdf; CableLabs, *PacketCable Qualified Products* (since

management servers were certified in April 2003; and IP-to-PSTN gateways were certified in July 2003.⁹⁵ Analog-to-digital adapters that rely on the Session Initiation Protocol (“SIP”) and other industry standards⁹⁶ as alternatives to PacketCable – were introduced in March 2002.⁹⁷ More sophisticated models that further improved service quality were introduced in December 2003.⁹⁸

Analysts now agree that VoIP routed over private networks fully matches the sound quality of conventional circuit-switched voice⁹⁹ – and most broadband service providers have in fact either partnered with backbone providers,¹⁰⁰ or have deployed their own private IP backbones.¹⁰¹ Even when voice over broadband is routed over the public Internet, moreover, service quality is comparable to, or better, than typical wireless service – fully adequate for price-sensitive customers, or for those who ascribe more value to the superior features that end-to-end digital service can offer.¹⁰²

the first PacketCable qualified CMTSS were approved in December 2002, 23 devices have been approved through the PacketCable certification/qualification process).

⁹⁵ See CableLabs Press Release, *Two CMS and Additional PacketCable Devices Get Certified/Qualified in Wave 25* (Apr. 11, 2003); CableLabs Press Release, *PacketCable Media Gateway Among Three New Certified/Qualified Devices* (July 25, 2003).

⁹⁶ See, e.g., *Merrill Lynch Voice over Broadband Report* at *2 (“We are now seeing ‘virtual’ phone-to-phone services that use the public Internet, thanks to recent innovations, including SIP (“Session Internet Protocol”) and low cost phone adapters.”); *July 2003 Goldman Sachs VoIP Report* at 20 (“SIP is the emerging protocol of choice for the VoIP service providers.”).

⁹⁷ See Vonage Press Release, *Cisco Introduces New SIP-Enabled Voice over IP Solutions* (Mar. 11, 2002) (introducing, among other VoIP products, the Cisco ATA 186, an analog telephony adapter.)

⁹⁸ See, e.g., Motorola Press Release, *Motorola Broadband and Vonage Team to Simplify Broadband Telephony for Consumers and Small Businesses* (Dec. 8, 2003) (“Unique product features of the VT1000v series voice terminal that improve the consumer experience for broadband telephone service are its embedded routing functionality and voice traffic prioritization.”).

⁹⁹ See, e.g., *Merrill Lynch Voice over Broadband Report* at *17 (“We have been testing the Vonage service for some time. In our experience, voice quality is good. Consumer Reports reached the same conclusion in testing reported in the July 2003 issue.”); *July 2003 Goldman Sachs VoIP Report* at 15 (“A study conducted by Columbia University Computer Science Associate Professor Henning Schulzrinne concluded that when the Internet is used as the transport network, net VoIP service availability is approximately 98%. . . . initial call failure probability is 0.47% on average, and call abortion (caller hangs up after an interruption) probability is about 1.53% on average”).

¹⁰⁰ See, e.g., M. Stump, *MSOs, AT&T Set Table for VoIP Rollouts*, *Multichannel News* (Dec. 15, 2003) (Time Warner Cable calls will travel from the Time Warner media gateway to either the MCI or Sprint network).

¹⁰¹ See, e.g., Cox Communications, *White Paper: Voice over Internet Protocol: Ready for Prime Time* at 3 (May 2004) (“The Cox advantage, in terms of architecture, rests in the fact that it owns and operates its own end-to-end network infrastructure, including a nationwide OC-48 IP backbone network”); F. Governali, *et al.*, *Goldman Sachs, T (IL/C): Analyst Mtg Provides No Arguments for Getting More Positive on Stock* at 2 (Feb. 26, 2004) (AT&T CallVantage service “looks much like what Vonage offers in the market today, except that it will be a managed service, riding on the AT&T network”).

¹⁰² See, e.g., *Merrill Lynch Voice over Broadband Report* at *2 (“We believe that a paradigm shift is under way in customer and operator attitudes toward phone service. We suspect that traditional ‘telco reliability’ . . . matters less than it did – while price, convenience and service matter more”); *id.* at *12 (noting “changing customer preferences with respect to phone service, which in our view lessen the value of ‘five nines’ telco reliability and increase the value of new services and functionality.”); J. Hodulik, *et al.*, *UBS, AT&T Corp.: Unveiling Consumer*

VoIP services now readily match conventional circuit-switched service in overall functionality as well – backup power,¹⁰³ total home wiring,¹⁰⁴ and number portability.¹⁰⁵ See Table 6. The addition of such “primary line” functions, AT&T states, is operationally straightforward and requires “less than 10% additional upgrade and rebuild capital.”¹⁰⁶ The one primary-line feature that not all VoIP providers have implemented is Enhanced 911 capability. A number of VoIP providers have accordingly adopted alternative 911 capabilities¹⁰⁷ that analysts believe many consumers will find adequate.¹⁰⁸ As discussed further below, VoIP already supports a number of other calling features far superior to those offered to mass-market users of conventional service. See Table 6.¹⁰⁹

VoIP at 2 (Dec. 11, 2003) (“We do not see voice quality as an issue, however, as consumers have increasingly become conditioned to accept lower quality through increased use of wireless calling.”).

¹⁰³ As described above, battery back-up power can now be provided as relatively inexpensive CPE. In any case, as Goldman Sachs notes, “Powering . . . appears to be an issue declining in importance as customers rely more and more on their wireless phones as an ‘emergency backup line.’ . . . In essence, it is arguable that powering is a ‘legacy requirement,’ and the customers will drive migration away from the limitations that powering imposes.” *July 2003 Goldman Sachs VoIP Report* at 5-6.

¹⁰⁴ See, e.g., J. Halpern, et al., Bernstein Research, *U.S. Telecom and Cable: Faster Rollout of Cable Telephony Means More Risk for RBOCs, Faster Growth for Cable* at 4 (Jan. 9, 2004) (“Time Warner’s offering is already more robust, with . . . total home wiring (i.e., all existing phone jacks)”; Cox, *Digital Telephone: Frequently Asked Questions*, <http://www.cox.com/roanoke/telephone/faqs.asp> (Cox’s service will “deliver dialtone to each of you[r] phone jacks.”); James Dolan, President & CEO, Cablevision, Presentation to UBS Media Week Conference at 38 (Dec. 11, 2003) (“Whole House Wiring Available . . . in 2004.”).

¹⁰⁵ See, e.g., Bernstein *Cable Telephony Report* at 5 (Time Warner’s initial cable IP telephony offering included LNP); Vonage, *Features: Keep Your Phone Number*, http://www.vonage.com/features_lnp.php?refer_id=27400178 (A customer can keep their “existing phone number.”); James Dolan, President & CEO, Cablevision, Presentation to UBS Media Week Conference at 38 (Dec. 11, 2003) (LNP will “[c]ome in 2004”).

¹⁰⁶ Greg Braden, CTO and EVP, Broadband Services, AT&T Broadband, Investor Presentation at 35 (July 25, 2001).

¹⁰⁷ See, e.g., A. Quinton, et al., Merrill Lynch, *VoIP Update: Notes from the FCC Forum on VoIP* at 3 (Dec. 1, 2003) (Vonage “offer[s] a form of 911 service”); Net2Phone Presentation at 13, *FCC VoIP Forum* (Dec. 1, 2003) (Net2Phone “has a 911 solution in place today”); Covad Press Release, *Covad Announces Voice Over Internet Protocol (VoIP) Deployment Plans* (Feb. 9, 2004) (Covad plans to offer VoIP “[with] emergency 911 . . . [as a] standard feature[.]”); AT&T Presentation at 20, *FCC VoIP Forum* (Dec. 2003) (“The National Emergency Number Association (NENA) and VoIP leaders, including AT&T Consumer, reached an agreement on key principles for providing 911 services to VoIP users.”); Letter from G. Carberry, Level 3 Communications to L. Rickard, CT DPUC, File # 2729.79443 (Jan. 21, 2004) (Level 3 “intends to provide 911 emergency service access to its Connecticut customers in the short term and in the long term”).

¹⁰⁸ See, e.g., A. Quinton, et al., Merrill Lynch, *US VoIP Update: Competitive, Regulatory and Other Issues* at 8 (Nov. 25, 2003) (“Vonage’s simple 911 solution, where the user specifies his location such that a call from his “number” reaches the right PSAP (Public Service Answering Point) might well be adequate.”).

¹⁰⁹ See generally A. Quinton, et al., Merrill Lynch, *US VoIP Update: Competitive, Regulatory, and Other Issues* at 4 (Nov. 25, 2003) (“Against traditional telecom, VoIP represents a classic disruptive force – cheaper, lower quality perhaps but able to offer services the existing provider can not match.”); J. Halpern, et al., Bernstein Research, *Telecom and Cable: VoIP Will Force Regulatory Lines to be Redrawn* at 3 (Nov. 13, 2003) (“[T]he inherent flexibility associated with a software-defined service suggests that feature/functionality of VoIP is likely to eventually significantly outstrip that of the traditional circuit-switched phone network.”); *Merrill Lynch Voice over Broadband Report* at *18 (“VoIP enables certain features that are not easily replicated by conventional carriers.”).

Consistent with the fact that VoIP now matches the quality and functionality of traditional service, VoIP providers now market their service as a primary-line replacement,¹¹⁰ and the majority of consumers are now purchasing the service as such. Some 86 percent of Time Warner's Digital Phone subscribers reportedly bring their old phone number with them when they sign up,¹¹¹ as do 50 percent of Vonage customers.¹¹² Cablevision still markets its service as a second-line replacement, but reports that more than a third of its customers use the existing service as primary line service anyway.¹¹³

¹¹⁰ See, e.g., AT&T, *AT&T CallVantage Features*, <http://www.usa.att.com/callvantage/what/features.jsp> (“With AT&T CallVantage, we’re taking your home phone to an entirely new level. One that completely outperforms what traditional telephones can do and revolutionizes how you stay connected.”); Vonage, *About Us*, http://www.vonage.com/corporate/aboutus_index.php (“Vonage offers an innovative, feature-rich and cost effective alternative to traditional telephony services.”); J. Atkin, et al., RBC Capital Markets, *Cable Update: Telephony and Video/Data/Voice Pricing Developments* at 1 (Mar. 16, 2004) (“[W]e have increasing confidence that cable VoIP deployments will offer stiff competition to RBOC telephony as most MSOs plan to market a primary -line telephony product with the intention of displacing the local telephone company (and having customers port their existing numbers).”).

¹¹¹ See *Britt/Time Warner Cable Presentation*; see also C. Moffett, et al., Bernstein Research Call, *Cable and Telecom: Bernstein Study Finds Consumers Ready and Willing To Switch to Cable Telephony* at 4 (Dec. 9, 2003) (“80-90% of Time Warner’s customers in Portland are opting to keep their existing number.”).

¹¹² See *UBS Vonage Story* at 5; A. Quinton, et al., Merrill Lynch, *US VoIP Update: Competitive, Regulatory, and Other Issues* at 9 (Nov. 25, 2003).

¹¹³ See C. Moffett, et al., Bernstein Research Call, *Cable and Telecom: Bernstein Study Finds Consumers Ready and Willing To Switch to Cable Telephony* at 4 (Dec. 9, 2003) (Cablevision is currently marketing its service as a second line for regulatory reasons); G. Campbell, et al., Merrill Lynch, *3Q03 Broadband Update: The Latest on Broadband Data and VoIP Services in the U.S. and Canada* at 15 (Nov. 3, 2003) (at least 37 percent of Cablevision’s subscribers have disconnected all other landline service) (“*Merrill Lynch 3Q03 Broadband Update*”).

Table 6. Feature Comparison – VoIP vs. PSTN						
Features	RBOC PSTN	Cable-vision	Time Warner	Cox VoIP	AT&T VoIP	Vonage
Primary Line Features						
911	✓	✓	✓	✓	✓	✓
E911	✓	✓	✓	✓		
Powering	✓	✓*		✓		
LNP	✓	✓*	✓	✓	✓	✓
Home Wiring	✓	✓	✓	✓		
Traditional Vertical Services on PSTN						
Caller ID	✓	✓	✓	✓	✓	✓
Call Forwarding	✓	✓		✓	✓	✓
Call Waiting	✓	✓	✓	✓	✓	✓
Call Waiting ID	✓		✓	✓	✓	✓
3-way Calling	✓	✓		✓	✓	✓
Voicemail	✓	✓	✓*	✓	✓	✓
Call Return	✓	✓		✓		✓
Repeat Dialing	✓			✓		✓
Caller ID Block	✓			✓		✓
Priority Ring				✓		
Choice of Long-Distance Providers	✓			✓		
Second Line	✓					✓
Advanced Features						
Tel. Number Portability					✓	✓
Area Code Selection						✓
Toll-Free Numbers (\$4.99/month)						✓
Advanced 411						✓
Online Real-Time Billing						✓
Virtual Phone Numbers						✓
Personal Conferencing					✓	
Call Logs					✓	
Online Call Management		✓*			✓	
Locate Me Service					✓	
Advanced Voicemail		✓			✓	
*Scheduled to be implemented in 2004. Sources: See Appendix D.						

Finally, VoIP already offers features and functionality that are superior to those available on circuit-switched networks, and VoIP is expected to be able to offer an even greater array of new features and functionality in the future.¹¹⁴ The IP platform is widely viewed as much more

¹¹⁴ See generally Merrill Lynch, *Everything Over IP* at 19 (“VoIP features evolution [is] likely to outstrip conventional phone service.”); D. Barden, *et al.*, Banc of America Securities, *Straight Talk on VoIP* at 3 (Apr. 15, 2004) (“The vast majority of the presentations from all the operators [at the VoIP seminar] focused on the enhanced

flexible than the circuit-switched platform, because it enables new features to be developed and deployed much more quickly and efficiently.¹¹⁵ Vonage has apparently “been deploying a new service feature every six weeks, on average (which it can achieve with a software push to the adapter). This compares to as much as a year or more in the traditional incumbent environment.”¹¹⁶

VoIP providers are already promoting the advanced features of their service. AT&T’s CallVantage offers “multiple advanced features such as call logs, unified messaging, settable do-not-disturb periods, ‘locate me’ functionality, and virtual conference call functionality.”¹¹⁷ AT&T recently added new capabilities – “the first in a long services of innovations the company plans to add” – which include an online, searchable phone book with storage for up to 250 names and phone numbers, and the ability to send alerts and to forward voicemail messages to multiple e-mail recipients.¹¹⁸ Vonage enables customers to “alter their phone line’s settings (call forwarding, call waiting, etc.), track real-time usage, or check voice mail all through the Internet.”¹¹⁹ Packet8 “offer[s] a videophone service and hardware.”¹²⁰ VoicePulse offers an “‘Open Access’ plan, which allows subscribers to use the service via any appropriately configured device such as a PDA, laptop, or IP phone.”¹²¹

Analysts expect an even wider array of features to be introduced in the future, as VoIP services become more integrated with data and video.¹²² Some of the anticipated features and functionality include: Web-based customization that enables the user to set special ring tones for different callers, instant line provisioning, or customized call-blocking; more advanced unified messaging and message management capabilities; and video-conferencing.¹²³ Service

capabilities of VoIP, the rate at which it enables innovation and the power it gives consumers to control their experience.”); J. Hodulik, *et al.*, UBS, *AT&T Corp.: Unveiling Consumer VoIP* at 3 (Dec. 11, 2003) (“IP provides a platform that, over time, should deliver a richer set of calling features than the traditional PSTN.”).

¹¹⁵ See, e.g., J. Halpern, Bernstein Research, *U.S. Telecom and Cable: Faster Rollout of Cable Telephony Means More Risk for RBOCs, Faster Growth for Cable* at 4 (Jan. 9, 2004) (noting the “flexibility of IP-based telephony platforms”); *Merrill Lynch Voice over Broadband Report* at *7, *37 (“VoIP has inherent advantages in its greenfield all-IP architecture and voice/data/ multimedia integration.” “It is not difficult to imagine that before long, VoIP will have a clear advantage over conventional telephony in terms of features, vendor support and R&D spending.”).

¹¹⁶ D. Barden, *et al.*, Banc of America Securities, *Straight Talk on VoIP* at 3 (Apr. 15, 2004).

¹¹⁷ L. Warner, *et al.*, Credit Suisse First Boston, *AT&T Launches VoIP in New Jersey: Competition for Voice Customers Accelerating* at 1 (Mar. 29, 2004).

¹¹⁸ AT&T News Release, *AT&T Adds New Features and Enhances AT&T CallVantage Service* (May 27, 2004).

¹¹⁹ *Parks Associates Residential VoIP Analysis* at 4-3.

¹²⁰ *Id.* at 4-4.

¹²¹ *Id.* at 4-6.

¹²² See, e.g., *Merrill Lynch, Everything Over IP* at 23 (“[W]e believe that service integration will occur, and that it will be more powerful than simple bundling. By service integration, we mean services that work together in a way that creates value for the customer, rather than simply being assembled as a package for marketing purposes.”).

¹²³ J. Halpern, Bernstein Research, *U.S. Telecom and Cable: Faster Rollout of Cable Telephony Means More Risk for RBOCs, Faster Growth for Cable* at 4 (Jan. 9, 2004); *Merrill Lynch Voice over Broadband Report* at *7.

integration will also allow “message manager” services that identify incoming phone calls on the customer’s TV screen.¹²⁴

II. Other IP-Enabled Services

A number of other IP-enabled services promise to exert competitive pressure on traditional networks and services. New video-over-IP services could provide much-needed competition to cable companies. IP-based services are also being successfully marketed to enterprise customers as substitutes for earlier generations of packet-switched services.

A. Video over IP

Video-over-IP is emerging right behind voice¹²⁵ and with cable operators now offering voice, many analysts believe that telephone companies will need to offer video to remain competitive.¹²⁶ IP can be used to deliver video over the fiber networks that some local telephone companies are now deploying, or in some cases over existing networks using DSL technology.¹²⁷ As Merrill Lynch notes, “the business case for telco TV has improved substantially,” and “can work economically.”¹²⁸

¹²⁴ See Merrill Lynch, *Everything over IP* at 23. See also *Hearing of the Senate Committee on Commerce, Science and Transportation*, Federal News Service (May 12, 2004) (Comcast President & CEO Brian Roberts: “[T]he IP platform lets us offer a differentiated product with services like integrated messaging so you can check your email and voice mail together on any number of different devices – as we saw some truly incredible IP videophones at the cable industry’s national show in New Orleans just last week – it gets me even more excited. Voice Over IP will make cable a ubiquitous facilities-based telephone competitor.”).

¹²⁵ See, e.g., Merrill Lynch, *Everything over IP* at 33 (“For cable, ‘video over IP’ has important implications: It represents a potential challenge to cable’s gatekeeper role for video content. . . . The demand for (and the value of) the broadband connection looks set to increase still further.”).

¹²⁶ See, e.g., A. Kishore, Yankee Group, *Will Video Drive New Revenue Growth for Telcos?* at 11 (May 2004) (Telcos “should not underestimate the threat of the cable bundle or the negative impact on their revenue of broadband and wireless migration and competitive carriers. They must commit to a video strategy today for it to drive revenue in the future.”); M. Davis, Yankee Group, *Telcos Take on Cable with Video Delivery* at 6 (Feb. 2004) (“Video would not command the attention of the telcos if the cable operators were not quickly moving into VoIP over cable. . . . Now that the MSOs are moving strongly into voice, the telcos fear their voice and DSL bundles will not be able to compete with a voice, cable broadband and cable TV bundle.”).

¹²⁷ New video compression technologies, based on the MPEG-4 standard, reduce by about half the amount of bandwidth needed to transport digital video, and new ADSL chips (such as ADSL2 and ADSL2+) increase bandwidth and improve quality of service. See, e.g., R. Talbot, et al., RBC Capital Markets, *Canadian Telecom Services: Battle for the Broadband Home* at 38 (Jan. 27, 2004) (“[I]ncremental improvements to MPEG2 will deliver acceptable quality real-time TV below 2.5 to 3.0 Mbps, while the launch of MPEG4 in 2005 is expected to reduce video streams to approximately 1.5Mbps.”); ATM Forum White Paper, *Delivering Video over Packet Networks* (Apr. 2003) (“The use of new video compression techniques based on MPEG-4 decreases the bandwidth requirement by 50%, effectively doubling the number of channels that can be carried concurrently.”); A. Bray, *IP Technologies I*, Light Reading (Oct. 1, 2003), http://www.lightreading.com/document.asp?site=lightreading&doc_id=40811&page_number=3 (“[T]he true enabler for video delivery is the advance in bandwidth and the latest generation of ADSL chips. With the new standards, such as S=1/2 and ADSL 2+, telcos can now deliver the bandwidth to meet commercial video requirements.”).

¹²⁸ Merrill Lynch, *Everything over IP* at 33 (“Our analysis suggests that DSL video can work economically: telcos can ‘afford’ to spend up to \$200 per home passed on network upgrades (likely enough for ADSL-based video)

A number of local telephone companies in the U.S. – 60 according to one source¹²⁹ – have already begun offering cable-like video service over DSL. Most are small independent telcos.¹³⁰ Larger local phone companies are actively considering the provision of such services as well, and are also now deploying fiber networks over which they plan to provide video services.¹³¹

Content owners – particularly movie studios in search of new distribution channels – are offering a number of other video-over-IP services to all DSL and cable modem subscribers.¹³² Five leading Hollywood studios have joined with Intel to form Movielink, which “allows users to download films ‘on demand’ in either Windows Media or Real format.”¹³³ Disney, Microsoft, and AOL have each launched a video-on-demand service as well.¹³⁴

The rise of video-over-IP has important competitive implications. As the Commission has found, wireline overbuilders provide the most effective competition to incumbent cable operators. “In areas where a wireline overbuild is present, cable subscribers receive more channels at lower prices.”¹³⁵ A recent study by the General Accounting Office reaches the same conclusion: “cable rates were approximately 15 percent lower in areas where a wire-based competitor was present. . . . Our interviews with cable operators also revealed that these

if no retention benefits are considered – and up to \$600 per home passed (likely enough for VDSL) if every second video customer represents a ‘saved’ phone customer.”)

¹²⁹ ATM Forum White Paper, *Delivering Video over Packet Networks* at 9 (Apr. 2003) (“There are already 60 phone companies in the US providing digital video over DSL, and they are getting good take-up rates.”).

¹³⁰ *Merrill Lynch Voice over Broadband Report* at *3 (“Smaller telcos in both the U.S. and Canada have already gone ahead with major access network rebuilds needed to support video and higher-speed DSL services.”); D. Briere, *et al.*, *What’s New with DSL TV?*, Network World Fusion (Apr. 27, 2004), <http://www.nwfusion.com/edge/columnists/2004/0426bleed.html> (“Within in the U.S., a number of independent (mainly rural) telcos have deployed video over ADSL solutions, combining local content, ‘cable’ channels and digital audio programming with high-speed Internet and voice services.”); *but see Merrill Lynch 3Q03 Broadband Update* at 12 (“Qwest currently provides DSL-based video services to approximately 64,000 customers using a combination of VDSL, satellite and hybrid fiber-coaxial cable. We believe that about 40,000 of these are on the VDSL platform.”).

¹³¹ *See, e.g.*, M. Davis, Yankee Group, *Telcos Take on Cable with Video Delivery* at 3 (Feb. 2004) (“[M]ajor operators such as Qwest, BellSouth, Verizon, SBC, Sprint and CenturyTel either have implemented or are experimenting with copper and fiber deployments” to provide video services.); *More Consumers to Get High-Speed Broadband Connection*, Appliance (Jan. 1, 2004) (ABI Research “believes that video-over-DSL will be the new kid on the block in coming years, with U.S. incumbent local exchange carriers and competitive local exchange carriers charging ahead with aggressive deployments to fend off cable’s triple-play offering.”); B. Bath, Lehman Brothers, *SBC Communications: Mgmt. Mtgs. Confirm Positive Outlook* at 3 (May 6, 2004) (SBC “is currently exploring the potential for switching video at the head-end/central office, instead of on the set-top box; in this way, the company can provide video service over copper to the house, as it would only have to provide 2 - 4 simultaneous video streams, instead of the current multiple hundreds being transmitted over the cable plant.”).

¹³² *Merrill Lynch, Everything over IP* at 31.

¹³³ *Id.* at 32.

¹³⁴ *Id.* (“In October 2003, Disney launched a wireless VOD service with TiVo-like features (‘MovieBeam’) in Jacksonville, Fla., Spokane, Wash., and Salt Lake City, Utah.”); *id.* (“The big ISPs are pushing hard to add video content to their services.” (citing Microsoft’s launch of “MSN Video” in January 2004 and AOL’s launch of “TV’s Top 5” in October 2003)).

¹³⁵ *Implementation of Section 3 of the Cable Television Consumer Protection and Competition Act of 1992*, Report on Cable Industry Prices, 17 FCC Rcd 6301, ¶ 47 (2002).

companies generally lower rates and/or improve customer service where a wire-based competitor is present.”¹³⁶ Numerous analysts now expect Video-over-IP to have a similar pro-competitive impact.¹³⁷

B. Enterprise IP

Competitive supplied IP-based services are already widely used by enterprise customers, as both complements to and as substitutes for older packet-switched services (Frame Relay and ATM) and traditional private line services.¹³⁸ IP-PBXs now represent approximately 30 percent of new PBX line shipments, and are expected to grow by at least 35 percent in 2004.¹³⁹ According to one recent survey, 45 percent of large businesses and 23 percent of medium-sized businesses are now using VoIP, with the totals expected to rise considerably (to 65 percent and 39 percent, respectively) by the end of 2004.¹⁴⁰ Another analyst estimates that, by 2005, “50% of Frame Relay customers will migrate to IP VPNs,”¹⁴¹ which provide virtual dedicated channels over any distance via IP backbones. Yet another analyst forecasts that, “[b]y 2006, nearly all large U.S. enterprises will use IP VPN services in some part of their network.”¹⁴²

¹³⁶ General Accounting Office, *Telecommunications: Issues Related to Competition and Subscriber Rates in the Cable Television Industry*, GAO-04-8, at 10 (Oct. 2003).

¹³⁷ See, e.g., F. Governali, Goldman Sachs, *Telecom Svcs: DSL Broadband Share Just Over 50% This Qtr; Ideal Situation* at 1 (Apr. 29, 2004) (“[I]f the telcos stick with these advances, and continue to improve speed, reliability, and the size of the addressable market they can stay even with the cable companies. . . . cable companies will lose some video market share.”); J. Hodulik, et al., UBS, *Gallup Survey Highlights VoIP Potential* at 2 (Apr. 8, 2004) (“The Bells are starting to roll-out video offerings . . . while the cable operators continue to deploy IP based telephony service. . . . Both groups are encroaching on the cash cow businesses of the other, which likely means further consumer benefits are on the horizon.”); *Merrill Lynch Voice over Broadband Report* at *2 (“Cable operators are now beginning to face real competition in HSD (high-speed data) services as well as in their core video services.”).

¹³⁸ See, e.g., C. Munroe, IDC, *U.S. Private Line Forecast and Analysis, 2002-2007* at 1-2 (Dec. 2003) (Convergence is driven by “[t]he migration by enterprises to IP VPN from private lines and frame relay,” and “[a]s prices have declined, many CLECs and incumbents have experienced great success marketing integrated T1 lines. With the growth of IP telephony, IDC expects this phenomenon to continue.”); L. Starr, Probe Group LLC, *The Enterprise Market* at 10 (Dec. 2003) (“IP VPNs should be seen as a means to extend the reach of Frame and ATM networks, not as substitutions.”).

¹³⁹ Telecommunications Industry Association, *2004 Telecommunications Market Review and Forecast* at Tables III-2.1, III-2.2 (2004) (citing TEQConsult Group). See also TIA Press Release, *Spending in U.S. Telecom Industry to Rise 6.8% to \$769.5 Billion in 2004, Turnaround in Sight for U.S. Telecom Equipment Spending* (Jan. 14, 2004) (“The enterprise equipment market expanded 3.9 percent to \$94 billion in 2003. In the enterprise, the shift to IP is boosting most segments of equipment spending. For instance, after declining in the previous three years, the PBX market bounced back in 2003 with a 12.0 percent increase, reaching \$4.2 billion on the strength of growing IP-PBX sales.”).

¹⁴⁰ S. Flannery, et al., Morgan Stanley, *Part I – Annual Telecom Survey: Spending Outlook* at 14-15 & Exhibit 28 (Mar. 25, 2004); see also J. Hodulik, et al., UBS, *UBS 2004 Telecommunications Services CIO Survey* (Mar. 1, 2004) (44% of Fortune 1000 Chief Information Officers surveyed “have already deployed VoIP, while another 18% plan to deploy over next 2 years.”).

¹⁴¹ L. Starr, Probe Group LLC, *U.S. Competitive Service Markets: The Enterprise Market* at 7 (Dec. 2003).

¹⁴² M. Schoener, et al., Gartner, *Fixed Public Network Services, United States, 2001-2007* at 13 (June 17, 2003).

Competing carriers lead in the provision of IP-based services to enterprise customers, just as they do in the provision of older packet-switched services like ATM and Frame Relay. See Appendix A at A-19 – A-21. AT&T and MCI were the first carriers to deploy Multi-Protocol Label Switching (MPLS) services that enable IP-based services to be provided over the same backbone networks as other packet-switched services.¹⁴³ AT&T now claims to be the leading the IP-VPN provider in the United States, and has declared that it will be the industry leader in VoIP.¹⁴⁴ MCI still operates one of the largest IP backbones in the world, and reports that private IP is the company’s fastest growing service.¹⁴⁵ Numerous other competing carriers have also deployed IP services for enterprise customers.¹⁴⁶ According to In-Stat/MDR, the five largest providers of IP-VPN service are AT&T, MCI, SAVVIS, Level 3, and Sprint; the only two BOCs in the Top 10 are Qwest and SBC, with a combined market share of only 3.4 percent.¹⁴⁷

Because they offer significant cost savings and efficiencies,¹⁴⁸ IP-based services are now putting significant price-pressure on enterprise-market services. As one analyst notes, “Voice over IP has emerged as a major reason for declining spending across local, data, and long distance spending.”¹⁴⁹ “Intense competition among VoIP vendors has driven prices down sharply since Q2 ’03,” according to Forrester Research, which predicts “a 20% to 30% yearly decline in VoIP [equipment] prices through 2006.”¹⁵⁰

¹⁴³ J. Marcus, Probe Group LLC, *Frame Relay versus IP VPN Markets in North America* at 3 (June 2003).

¹⁴⁴ Bill Hannigan, President, AT&T, *AT&T Business Overview: The Networked Enterprise* at 14 (Feb. 25, 2004).

¹⁴⁵ C. Marsan, *MCI Rolls Out Convergence Services*, NetworkWorldFusion (Apr. 5, 2004), <http://www.nwfusion.com/newsletters/isp/2004/0405isp1.html> (quoting Jim DeMerlis, VP, Data and IP Services, MCI).

¹⁴⁶ See, e.g., V. Grover, Needham & Company, *VoIP in the Spotlight – Ways to Play the Trend* at 2 (Nov. 28, 2003) (“[Level 3] offers VoIP solutions through indirect channels geared for enterprises and carriers”); Global Crossing, *Company*, http://www.globalcrossing.com/xml/global/gl_company.xml (“Leverage Global Crossing’s global, fully meshed MPLS -te IP network. . . . [w]hether you’re a carrier in need of capacity, or an enterprise looking for network transport or value-added services.”); ICG Communications, *VoicePipe – Set Your Whole Enterprise Free*, <http://www.icgcomm.com/products/corporate/voicepipe/voicepipe.asp> (offering “VoicePipe” IP telephony for enterprise customers).

¹⁴⁷ See H. Goldberg, In-Stat/MDR, *VPNs Take a New Look: Trends in the US IP VPN Services Market*, Report No. IN0401350BD at Table 5 (Jan. 2004).

¹⁴⁸ AT&T, *AT&T Managed Router Service with Voice Over IP*, <http://www.business.att.com/content/productbrochures/mrsvoip.pdf> (“Voice over IP can move your circuit-switched voice and faxtraffic off the Public Switched Telephone Network (PSTN), compressing and multiplexing it onto your data network. You can save as much as 30% to 40% on your domestic calls, and as much as 80% to 90% on international calls.”); L. Starr, Probe Group LLC, *U.S. Competitive Service Markets: The Enterprise Market* at 6 (Dec. 2003) (“Enterprises’ decision to roll out MPLS and IP-based services may be driven by lower operational expense and improved quality of service (QoS). The first new service area is likely to be IP VPNs, this due to the cost savings afforded by IP VPN when compared to legacy services.”).

¹⁴⁹ S. Flannery, et al., Morgan Stanley, *Part 1 – Annual Telecom Survey: Spending Outlook* at 1 (Mar. 25, 2004).

¹⁵⁰ V. Bhagavath, et al., Forrester, *Second-Generation VoIP* at 2 (Sept. 2003).

APPENDIX A BROADBAND COMPETITION: MAY 2004

This appendix provides an overview of competition in the provision of broadband services. It demonstrates that cable companies continue to dominate the provision of mass-market broadband service, while at the same time competition is also increasing from a number of other technologies. As a recent study finds, this is true not only for residential customers, but also for small-business customers for whom cable has become the most used broadband technology and who also rely heavily on alternative technologies such as fixed wireless and satellite. Moreover, competing carriers also dominate the provision of broadband services to large business customers, which likewise enjoy increasing access to alternative technologies.

A. Cable Operators Dominate the Broadband Mass Market

Recent data show that cable continues to dominate the broadband mass market. According to the Commission's latest *High-Speed Services Report*, as of June 2003, cable controlled more than *two-thirds* of all high-speed lines provided to residential and small-business customers,¹ which is the segment of the broadband market that cable operators target.² As of that same date, cable also controlled more than *83 percent* of the most rapidly growing segment of mass-market broadband lines – those capable of over 200 kbps in both directions.³ In both cases, cable has increased its lead in the most recent six-month period for which the Commission reports data.⁴

Although the Commission's data are current only as of June 2003, more recent data show that cable has continued to maintain its lead over DSL through the first quarter of 2004, despite significant price decreases by DSL providers.⁵ See Table 1. In the past nine months, cable added just over 3.3 million new subscribers, compared to only 2.9 million added by DSL. See Table 1.

¹ Ind. Anal. & Tech. Div., Wireline Competition Bureau, FCC, *High-Speed Services for Internet Access: Status as of June 30, 2003* at Tables 3 & 4 (Dec. 2003) (“*High-Speed Services Report*”).

² Compare *High-Speed Services Report* at Table 3 (Cable provides 13,660,541 high-speed lines to residential and small-business customers) with *High-Speed Services Report* at Table 1 (Cable provides a total of 13,684,225 high-speed lines).

³ See *High-Speed Services Report* at Table 4. Residential and small-business high-speed lines capable of over 200 kbps in both directions represented 85 percent of all residential and small-business high-speed lines added between June 2002 and June 2003, and 78 percent of all high-speed lines added during that same period. See *id.* at Tables 1, 3 & 4. Verizon introduced a symmetrical xDSL service capable of over 200 kbps in both directions in July 2003. See Letter from Richard Ellis, Verizon, to Marlene Dortch, FCC, Transmittal No. 343 (July 22, 2003).

⁴ See *High-Speed Services Report* at Table 3 (Cable share of all residential and small-business high-speed lines grew from 65 to 66 percent from December 2002 to June 2003); *High-Speed Services Report* at Table 4 (Cable share of residential and small-business high-speed lines with over 200 kbps in both directions grew from 79 to 83 percent from December 2002 to June 2003).

⁵ See, e.g., J. Hodulik, *et al.*, UBS, *High-Speed Data Update for 1Q04: DSL Net Adds Greater Than Cable for First Time Ever* at 1 (May 21, 2004) (“Cable continues to control the market for broadband with 60% share.”); G. Campbell, *et al.*, Merrill Lynch, *Everything over IP* at 2 (Mar. 12, 2004) (“Thanks to price-cutting, DSL made modest inroads into cable’s dominant position in the U.S. market.”) (“*Merrill Lynch, Everything over IP*”).

DSL			Cable		
	Net Adds 3Q 2003-1Q 2004	Total Subs. 1Q 2004		Net Adds 3Q 2003-1Q 2004	Total Subs. 1Q 2004
SBC	1.2 million	4.0 million	Comcast	1.3 million	5.7 million
Verizon	733,000	2.7 million	Time Warner	600,000	3.6 million
BellSouth	393,000	1.6 million	Cox	475,000	2.2 million
Qwest	208,000	744,000	Charter	304,000	1.7 million
Sprint	126,000	349,000	Cablevision	208,000	1.1 million
Other*	236,000	1.1 million	Other*	449,000	1.7 million
Total	2.9 million	10.4 million	Total	3.3 million	15.9 million

*Other DSL providers are ALLTEL, Citizens Communications, Cincinnati Bell, CenturyTel, Commonwealth Telephone, and Covad. Other cable modem providers are Adelphia, Mediacom, and Insight Communications.
Source: See Appendix D.

Cable also continues to lead DSL in terms of availability and penetration. Cable modem service is now available to more than 85 percent of all U.S. households,⁶ and by the end of 2004 will be available to 90 percent of U.S. households.⁷ Four of the largest cable companies (Comcast, Time Warner, Cox, and Cablevision) now make cable modem service available to between 95 and 100 percent of their homes passed,⁸ and between 25 and 36 percent of these companies' video subscribers now take cable modem service.⁹ The Bell companies, by contrast, currently make DSL available to about 75-80 percent of their homes passed,¹⁰ and only between 7 and 15 percent of their residential voice subscribers take DSL.

Cable modem service is available in virtually all of the same markets where DSL is provided. JP Morgan has estimated that no more than 5 percent of U.S. households would be able to receive DSL but not cable modem by the end of 2003.¹¹ The actual number may well be even lower today, given that JP Morgan assumed that cable modem service would be available to

⁶ See NCTA, *Broadband Services*, <http://www.ncta.com/Docs/PageContent.cfm?pageID=37>; see also J. Halpern, et al., Bernstein Research Call, *Broadband Update: DSL Share Reaches 40% of Net Adds in 4Q . . . Overall Growth Remains Robust* at Exhibits 1 & 6 (Mar. 10, 2004) ("*Mar. 2004 Bernstein Broadband Update*") (cable broadband available to 92.3 percent of total cable homes passed).

⁷ See *id.* at 7.

⁸ See, e.g., *id.* at 7 & Exhibit 6 (reporting cable modem availability at 98.5% for Time Warner, 97.7% for Cox, 100% for Cablevision, and 87% for Comcast, which is adding almost 3.5 million homes passed in 2004).

⁹ A. Bourkoff & J. Hodulik, UBS, *High-Speed Data Update for 4Q03: Getting Ready for Cable Telephony* at 8, Chart 6 (Mar. 11, 2004) ("*UBS 4Q03 High-Speed Data Update*").

¹⁰ See *Mar. 2004 Bernstein Broadband Update* at 7, Exhibit 7 (reporting DSL availability at 75% for SBC, 80% for Verizon, 74% for BellSouth, and 45% for Qwest).

¹¹ See J. Bazinet, et al., JP Morgan, *Broadband 2003* at Figure 9 (Dec. 5, 2002).

only 76 percent of all U.S. households as of year-end 2003, whereas the actual total today is somewhere between 85 and 90 percent.¹²

Broadband competition is thriving for small-business customers just as it is for residential customers.¹³ Cable companies have moved rapidly to provide cable modem services to small-business customers. Five of the six largest cable system operators (which, collectively, represent over 90 percent of consumer cable modem subscribers) already offer broadband services specifically tailored to small businesses.¹⁴ These cable operators have acknowledged that they can readily reach most small-business customers with their existing infrastructure, and that it makes sense to serve them.¹⁵ Indeed, these cable operators already have been very successful in attracting small-business subscribers.¹⁶

Several recent studies confirm that small businesses are increasingly turning to cable modem service for their broadband needs.¹⁷ A March 2004 study commissioned by the Small Business Administration, which the CLECs' own trade association has praised as a "well-researched report,"¹⁸ separately analyzed small businesses according to three different segments (those with 0-4 employees, those with 5-9 employees, and those with revenues less than \$200,000), and found that "for all three segments penetration was higher for cable modem service than for DSL."¹⁹ A December 2003 study by In-Stat/MDR analyzes small businesses with 5 to 99 employees and finds that, as of year-end 2003, there were 2.1 million such

¹² See *id.*

¹³ See Letter from Dee May, Verizon, to Marlene H. Dortch, FCC, WC Docket Nos. 01-337, 02-33, 98-10, 98-20 at 10-17 (Nov. 13, 2003) ("*Verizon November 13, 2003 Ex Parte*"); see also Letter from Edward Shakin, Verizon, to Marlene H. Dortch, FCC, WC Docket Nos. 01-338, 96-98, 98-147, 02-33, 01-337 (Jan. 15, 2003).

¹⁴ See J. Shim, Credit Lyonnais Securities, *The U.S. Cable Industry – Act I* at 196-202 (Nov. 20, 2002); Time Warner, *Time Warner Cable*, http://www.aoltimewarner.com/companies/time_warner_cable_index.adp.

¹⁵ See, e.g., A. Figler, *Turning Businesses into Customers*, Cable World (Dec. 9, 2002) (Ken Fitzpatrick, senior vice president of commercial services for Time Warner Cable: "We've got an infrastructure there that is just ripe for commercial services. . . . We pass 1.2 million businesses."); Jason Livingood, Director of Comcast Commercial Internet Services, *Overview of Cable Modem Offerings for Businesses in Maryland* (Aug. 15, 2002) (Comcast targets "SMBs with 1-100 employees," "Non-profit orgs, schools, government," and "SMBs and Enterprises with telecommuters.").

¹⁶ See, e.g., *A Snapshot of the Cox Business Strategy*, Interview with Coby Sillers, Vice President and General Manager for Cox Business Services, Xchange Mag. (June 1, 2003) ("Cox Business Services now serves more than 65,000 business customers, and the company's business efforts have grown in the past three years from less than 1 percent of Cox's overall revenue to just more than 5 percent of Cox's consolidated revenue."); J. Barthold, *Small Business, Big Money, No Guarantees*, TelephonyOnline (Aug. 12, 2002) (Kevin Curran, senior vice president of marketing and sales for Cablevision Lightpath: Cablevision "can't keep up with demand" for Cablevision's Business Class Optimum Online service for small businesses).

¹⁷ S. Pociask, Telenomic Research, LLC, *A Survey of Small Businesses' Telecommunications Use and Spending* (Mar. 2004) ("*Small Business Administration Study*"); K. Burney, In-Stat/MDR, *The Data Nation: Wireline Data Services Spending and Broadband Usage in the US Business Market; Part Three: Small Businesses (5 to 99 Employees)* (Dec. 2003) ("*In-Stat/MDR Small Business Study*").

¹⁸ ALTS Press Release, *ALTS Applauds SBA's Survey of Competition for Small Business Customers* (Mar. 11, 2004) (statement of ALTS president John D. Windhausen, Jr.).

¹⁹ See *Small Business Administration Study* at 44, 47 (Fig. 32), 48 (Fig. 33), 50 (Fig. 35).

businesses using cable modems compared to 1.4 million using DSL.²⁰ A November 2003 study by In-Stat/MDR finds that small offices and home offices (businesses with fewer than 5 employees) subscribe to cable modem service more than twice as often as they subscribe to DSL.²¹

These studies also demonstrate that small businesses use cable modem service far more often than the T-1 services the local telephone companies provide. The Small Business Administration study finds that the penetration of T-1 services among small businesses is only 4 percent, compared to 26 percent for cable modem services.²² In-Stat/MDR likewise reports low penetration rates of T-1 service among the small-business customers it studied.²³

The most recent competitive offerings and promotions from DSL and cable operators also demonstrate that there is extensive head-to-head competition across all geographic markets and for all segments of the mass market. In recent months, each of the Bell companies has cut their national DSL prices considerably. *See* Tables 2 & 4. Cable operators have responded with promotional and targeted price reductions, and, more broadly, by increasing data speeds that effectively offer consumers more bandwidth at a lower price than those operators' previous offerings. *See* Table 4.²⁴ And because these price wars began *after* the *Triennial Review Order*, they also vindicate the Commission's recent decision to phase out line sharing.²⁵

Tables 2 and 3 show current broadband offerings over DSL and cable to residential and small-business customers, respectively. The tables reflect the standard prices for high-speed Internet access service – that is, Internet access bundled together with broadband transport. In Table 2, the bottom of the price range reflects prices when the lowest-speed broadband service is purchased together with at least one other service – voice service (local and long-distance) in the case of DSL, and video or voice service in the case of cable.²⁶ The higher prices in the range are

²⁰ K. Burney, In-Stat/MDR, *The Data Nation: Wireline Data Services Spending and Broadband Usage in the US Business Market; Part Three: Small Businesses (5 to 99 Employees)* (Dec. 2003).

²¹ *See* K. Burney & C. Nelson, In-Stat/MDR, *The Business Hot Wire!: Data Access in the Commercial and Residential Environments of US Businesses; Part One: Cable Modem Services* at 26, Table 11 (Nov. 2003) (48.5% of SOHO businesses subscribe to cable modem; 17.8 percent subscribe to DSL).

²² *See Small Business Administration Study* at 44 (Fig. 30); *see also id.* at 47 (Fig. 32), 48 (Fig. 33), 50 (Fig. 35).

²³ *See* K. Burney & C. Nelson, In-Stat/MDR, *The Business Hot Wire!: Data Access in the Commercial and Residential Environments of US Businesses; Part One: Cable Modem Services* at 20, Table 11 (Nov. 2003) (8.5% of SOHO businesses and 25.6% of small businesses use Full T-1 in their main office; 5.9% and 17.3%, respectively, use Fractional T-1; and 48.5% and 43.7%, respectively, use cable modem).

²⁴ *See also* G. Campbell, *et al.*, Merrill Lynch, *3Q03 Broadband Update: The Latest on Broadband Data and VoIP Services in the U.S. and Canada* at 2 (Nov. 3, 2003) (cable operators “are increasingly moving ‘off the rate card,’ with market-specific pricing and increased use of promotional and bundled-price discounts specific to certain markets”) (“*Merrill Lynch 3Q03 Broadband Update*”).

²⁵ *See Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking*, 18 FCC Rcd 16978, ¶ 263 (2003) (“*Triennial Review Order*”). Of course, competitive providers of DSL service have traditionally accounted for a only a small fraction of the broadband market, particularly for mass-market customers. *See, e.g., High-Speed Services Report* at Table 5.

²⁶ *Merrill Lynch, Everything over IP* at Table 2.

for broadband service purchased without one of those other services, or for higher-speed service. In Table 3, the bottom of the price range reflects prices under a one-year contract for the lowest-speed broadband service (with dynamic IP addresses, where available); the higher prices in the range are for higher speeds under a one-year contract.²⁷ The prices do not factor in the promotional discounts that, as demonstrated in Table 4, both DSL and cable modem providers are now routinely offering their customers.

Technology	DSL				Cable Modem			
Provider	Verizon	SBC	BellSouth	Qwest	Comcast	Cablevision	Cox	Time Warner
Downstream Bandwidth	1.5 Mbps	384 kbps-3 Mbps	256 kbps-3 Mbps	256 kbps-1.5 Mbps	3 Mbps	3.5 Mbps	3 Mbps	2 Mbps
Upstream Bandwidth	384 kbps	128-384 kbps	128-384 kbps	256-896 kbps	256 kbps	1 Mbps	256 kbps	384 kbps
Monthly Price	\$29.95-\$34.95	\$26.95-\$59.99	\$26.95-\$54.95	\$15.00-\$44.99	\$42.95-\$57.95	\$44.95-\$49.95	\$39.95-\$49.95	\$44.95-\$59.95

Sources: See Appendix D.

Technology	DSL				Cable		
Provider	Verizon Business DSL	SBC Symmetric DSL	Covad TeleSpeed Business DSL	AT&T Business Class DSL	Time Warner Road Runner Business Class	Comcast Business Comm. Comcast Workplace	Cablevision Business Class Optimum Online
Downstream Bandwidth	384 kbps-7.1 Mbps	144 kbps-1.5 Mbps	144 kbps-1.5 Mbps	144 kbps-1.5 Mbps	1-4 Mbps	4-5 Mbps	10 Mbps
Upstream Bandwidth	384-768 kbps	144 kbps-1.5 Mbps	144 kbps-1.5 Mbps	144 kbps-1.5 Mbps	256 kbps-2 Mbps	384-512 kbps	1 Mbps
Monthly Price	\$39.95-\$204.95	\$89.99-\$289.95	\$125.95-\$289.95	\$149.95-\$399.95	\$79.95-\$399.95	\$145-\$200	\$109.95

Sources: See Appendix D.

²⁷ The one exception to this is for Covad. The low-end for Covad reflects pricing under a two-year contract; the high-end reflects pricing under a one-year contract; and both exclude a one-time rebate of \$150-\$584. AT&T also offers a one-time rebate which is not reflected here.

Table 4. Recent Changes in Cable/DSL Competitive Offerings and Promotions

DSL		
Verizon	May 2003	Lowered monthly rate by 30% to \$34.95 (\$29.95 when bundled with phone service); increased maximum download speeds to 1.5 Mbps from 768 kbps
	May 2004	Raised maximum upstream speeds for the 1.5 Mbps service from 128 kbps to 384 kbps. Announced plans to offer a 3.0 Mbps/768 kbps service in the summer
SBC	Feb. 2003	Lowered monthly rate to \$34.95 with a one-year contract
	1H 2003	Lowered monthly rate with bundled service to \$24.95 in San Diego and Orange County, Cal.; Kansas City, Mo., and Wichita, Kan., with one-year commitment
	June 2003	Lowered \$34.95 monthly rate to \$29.95 for new customers
	Sept. 2003	Lowered prices by 10% to \$26.95 across its region to customers who sign-up online or purchase DSL within a bundle with a one-year commitment
	Feb. 2004	Replaced a \$99.95 high-end offering with 3.0 Mbps/384 kbps service for \$44.99
	Apr. 2004	Reduced price for 3.0 Mbps/384 kbps service to \$36.99 when purchased with local, long-distance, and wireless service. Reinstated promotion of \$26.95 per month for download speeds of up to 1.5 Mbps.
BellSouth	2Q 2003	Offered introductory rate of \$19.95 for first three months
	July 2003	Implemented tiering and selective discounts, including \$5/month reduction in its more competitive DSL markets
	3Q 2003	Began offering free first and third months of service
	3Q 2003	Reduced monthly rates to \$29.95 and \$39.95, when DSL is purchased with unlimited local and long-distance calling
Qwest	2003	Reduced monthly rate by 30 percent to \$34.99 when purchased as part of a bundle
	3Q 2003	Reduced monthly modem rental fees from \$5 to \$2; monthly rate with bundled service is now \$29.95
CABLE		
Comcast	Sept. 2003	Launched aggressive promotional trial, offering \$19.95 for one year to a select group of DSL customers in California, Illinois, and Maryland
	3Q 2003	Offered \$19.99 per month (effective for 3 or 6 months) for video customers, or \$33.99 per month for non-video customers, in most markets.
	Oct. 2003	Announced increased download speed to 3 Mbps from 1.5 Mbps
Time Warner	Oct. 2003	Increase download speed to 3 Mbps from 2 Mbps
	Dec. 2003	Lowered monthly rate in Kansas City, Mo. from \$44.95 to \$26.95 for one year
	4Q 2003	Currently testing faster upload speeds (512 kbps)
Charter	Sept. 2003	Increased download speeds to 2.0 Mbps at no extra charge
Cablevision	Aug. 2003	Began limited promotion of \$29.95 for the first six months
Cox	3Q 2003	Reduced monthly modem rental rate from \$15 to \$10
	4Q 2003	Rolling out a reduced-priced data product in 7 markets – Northern Va., Kan., New Orleans, Humboldt and Santa Barbara, Cal., Phoenix, and Ga.
	4Q 2003	Plans to add a higher-speed service as part of its tiering strategy
Adelphia	Oct. 2003	Increased download speed to 3 Mbps; doubled upload speed to 256 kbps
RCN	Oct. 2003	Increased top download speed to 5 Mbps; doubled download speed of lower-priced tier to 3 Mbps
Mediacom	Jan. 2004	Announced it will double download and upload speeds to 3 Mbps and 256 kbps, respectively, at no extra charge

Sources: See Appendix D.

Finally, the fact that cable and DSL providers are engaging in aggressive comparative advertising provides additional confirmation that they are competing head-to-head for the same customers in the same markets. For example, Time Warner boasts that its “High Speed Online . . . leaves DSL in the dust.”²⁸ Comcast claims “download speeds up to 2x faster than 1.5 Mbps DSL.”²⁹ Cablevision claims its service “is more than twice as fast as the lowest-priced DSL.”³⁰ BellSouth points out that DSL “provides a dedicated connection to your home to the [] DSL network. Cable modem service shares a connection with other cable modem subscribers.”³¹ A recent SBC print ad encourages customers to “stop throwing money away on cable and sign up for SBC Yahoo DSL.” A recent Verizon television ad boasts service “that’s 13 bucks less than Comcast,” and, unlike Comcast includes a pop-up blocker, antivirus software, and modem. Within several weeks of airing this spot, Comcast aired a copycat advertisement – using the same set, format, and body double.³² According to MINTEL’s Comperemedia, telephone companies have also boosted their direct-mail marketing efforts “primarily due to cable companies’ more aggressive marketing of packages with cable modem and cable TV services and most recently, phone service.”³³

Analysts expect all of these trends to continue, and for the broadband market to become increasingly competitive, for the foreseeable future. Prices are expected to continue to drop even further.³⁴ Deutsche Bank, for example, expects the cable industry “to lower basic pricing very close to the \$30 level in reasonably short order.”³⁵ Broadband penetration is expected to increase apace, from 22 percent of U.S. households today, to 30 percent by the end of 2004, and almost 40 percent by the end of 2005. *See* Figure 1.³⁶

²⁸ Time Warner Cable, *Products & Services: High Speed Online from Time Warner Cable*, <http://www.timewarnercable.com/dispatcher/products;jsessionid=0000LZJGUTC4AGS3LJ0T3J34NUY:-1?category=10056&expand=Y&rootCategory=10050&src=0homeHSO>.

²⁹ Comcast, *Features*, <http://www.comcast.com/Benefits/CHSIDetails/Slot3PageOne.asp>.

³⁰ Optimum Online, *What Is It?*, <http://www.optimumonline.com>.

³¹ BellSouth, *Common Questions*, http://www.fastaccess.com/content/consumer/common_questions.jsp.

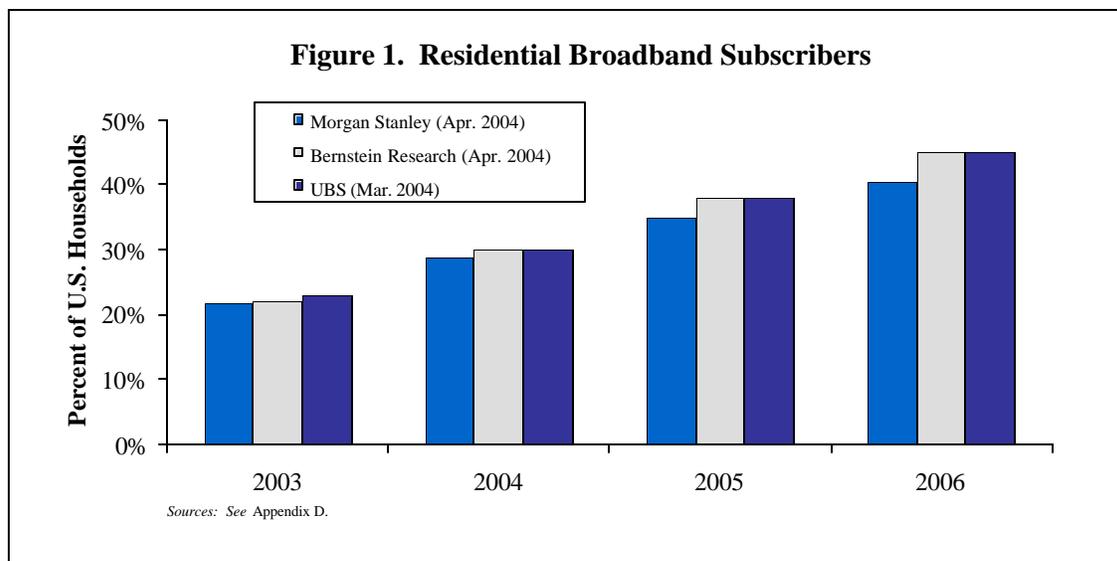
³² Transcript of Verizon Online DSL advertisement aired on Feb. 4, 2004 at 5:58 AM on WNBC in New York, NY. The Comcast ad was subsequently pulled off in the air, in response to copyright and other challenges made by Verizon.

³³ MINTEL’s *Comperemedia: Telecom Companies Push Bundled Services Packages*, Business Wire (Mar. 9, 2004).

³⁴ *See, e.g.,* R. Bilotti, *et al.*, Morgan Stanley, *Broadband Update – Tiering Strategies* at 4 (Apr. 12, 2004) (“[O]ur forecasts assume that cable modem pricing declines from an average of \$40 in 2003 to approximately \$34-36 longer term.”).

³⁵ V. Shvets, *et al.*, Deutsche Bank Securities Inc., *Wireline Services; DSL – A Reversal of Fortune* at 4 (May 4, 2004).

³⁶ As of year-end 2003, there were approximately 24 million households subscribing to broadband service. *See Mar. 2004 Bernstein Broadband Update* at Exhibit 1. *See also* Cathy Martine, SVP Internet Telephony & Consumer Product Management, AT&T, *Voice over IP* at 5 (Feb. 25, 2004) (justifying AT&T’s VoIP strategy to investors based on estimates of Residential Broadband Subscribers increasing to more than 45 million by 2007).



B. There Is Significant Mass-Market Broadband Competition from Other Sources

The Commission has already recognized that, in addition to cable and DSL, there are numerous additional platforms and technologies already competing in or poised to enter the broadband mass market, including power lines, fixed wireless, 3G mobile wireless, and satellite.³⁷ Indeed, many of these technologies are already being used to provide service offerings that are competitive with DSL and cable modem services, both for residential and small-business customers. See Tables 5 & 6. Under well-settled precedent, all of these alternatives must be taken into account in the analysis of broadband competition,³⁸ particularly given that the broadband market is still “in the earliest stages” and is evolving rapidly.³⁹

³⁷ See, e.g., *Inquiry Concerning the Deployment of Advanced Telecommunications Capability*, Third Report, 17 FCC Rcd 2844, ¶¶ 79-88 (2002); *Triennial Review Order* ¶ 263 (“[T]he Commission also has acknowledged the important broadband potential of other platforms and technologies, such as third generation wireless, satellite, and power lines.”) (citing *Third Section 706 Report 2002*, 17 FCC Rcd 2844, ¶¶ 79-88 (2002)); R. Mark, *Broadband over Power Lines: FCC Plugs In*, Internetnews.com (Apr. 23, 2003), <http://dc.internet.com/news/article.php/2195621> (Chairman Powell: “[t]he development of multiple broadband-capable platforms – be it power lines, Wi-Fi, satellite, laser or licensed wireless – will transform the competitive broadband landscape.”).

³⁸ The Commission has held that a proper market analysis must “examine not just the markets as they exist today,” but must also take account of “future market conditions,” including “technological and market changes, and the nature, complexity, and speed of change of, as well as trends within, the communications industry.” *Applications of NYNEX Corp., Transferor, and Bell Atlantic Corp., Transferee, for Consent To Transfer Control of NYNEX Corp. and Its Subsidiaries*, Memorandum Opinion and Order, 12 FCC Rcd 19985, ¶¶ 3, 7, 41 (1997) (“*Bell Atlantic/NYNEX Merger Order*”); *Applications of Teleport Communications Holding Group Inc., Transferor, and AT&T Corp., Transferee, For Consent To Transfer of Control of Corporations Holding Point-to-Point Microwave Licenses and Authorizations To Provide International Facilities-Based and Resold Communications Services*, Memorandum Opinion and Order, 13 FCC Rcd 15236, ¶ 19 n.65 (1998); *Applications for Consent to the Transfer of Control of Licenses from Comcast Corp., Transferor, and AT&T Corp. to AT&T Comcast Corp., Transferee*, Memorandum Opinion and Order, 17 FCC Rcd 23246, ¶ 27 (2002); see also *Triennial Review Order* ¶ 263 (“The fact that broadband service is actually available through another network platform and may potentially be available through additional platforms helps alleviate any concern that competition in the broadband market may be heavily dependent

Technology	BPL	Satellite		Fixed Wireless
Provider	Prospect Street Broadband	DIRECWAY	StarBand	NTELOS Portable Broadband
Downstream Bandwidth	200-300 kbps	500 kbps	200-500 kbps	1.5 Mbps
Upstream Bandwidth	200-300 kbps	50 kbps	40-60 kbps	550 kbps
Monthly Price	\$26.95	\$59.99-\$99.99	\$49.99-\$99.99	\$49.95-\$69.95
Availability	Manassas, VA	Continental U.S.	Nationwide	VA Cities

Sources: See Appendix D.

Technology	Satellite		Fixed Wireless
Provider	DIRECWAY	StarBand Small Office	NTELOS Portable Broadband
Downstream Bandwidth	200 kbps-1.5 Mbps	150 kbps-1 Mbps	1.5 Mbps
Upstream Bandwidth	n/a	40-100 kbps	550 kbps
Monthly Price	\$75.99-\$189.99	\$119.99-\$149.99	\$49.95-\$69.95

Sources: See Appendix D.

1. Fixed Wireless

Recent evidence confirms that fixed wireless continues to be a viable broadband alternative for many customers, and is likely to grow significantly in the future. The Commission has estimated that residential fixed wireless Internet access is available in counties that contain approximately 62 million people, or 22 percent of the U.S. population.⁴⁰ The national trade association for fixed wireless providers has stated that “approximately 1,500-1,800 [Wireless Internet Service Providers] already are providing service to approximately 600,000 subscribers in the U.S., with subscribership expected to double by the end of 2003 and reach nearly 2,000,000 by the end of 2004.”⁴¹ As the Chairman of that association has noted,

upon unbundled access.”); *FCC v. RCA Communications, Inc.*, 346 U.S. 86, 96-97 (1953); *FCC v. WNCN Listeners Guild*, 450 U.S. 582, 594-95 (1981).

³⁹ *Bell Atlantic/NYNEX Merger Order* ¶¶ 40-41; see also *Inquiry Concerning the Deployment of Advanced Telecommunications Capability*, Third Report, 17 FCC Rcd 2844, ¶¶ 79-88 (2002) (“preconditions for monopoly appear absent” in the broadband market).

⁴⁰ *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*, Eighth Report, 18 FCC Rcd 14783, A-4 at n.709 (2003).

⁴¹ Comments of the License-Exempt Alliance at 3, *Revision of Parts 2 and 15 of the Commission’s Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, ET Docket No. 03-122

“[w]ireless ISPs have rolled out broadband service in virtually every state of the union – and in hundreds of rural and metropolitan markets. . . . Wireless has boldly become the nation’s third pipe for last-mile access.”⁴²

In just the past few months, there have been a number of new deployments of fixed wireless broadband service. In May 2004, NextNet announced the launch of non-line-of-sight broadband wireless service in conjunction with three regional ISP partners: W.A.T.C.H. TV in Ohio, SpeedNet in Michigan, and Gryphon Wireless in Nebraska.⁴³ Earlier this year, NextNet reported a successful trial with America Connect in Granville County, N.C.⁴⁴ In January 2004, NTELOS “announced initial commercial deployment of ‘Portable Broadband, high speed-Internet access to go’ in Charlottesville, Stuarts Draft, and Waynesboro, Va. “for business and residential users.”⁴⁵ In December 2003, SR Telecom announced that its fixed wireless access product was selected by Southwest Texas Telephone Company “to deliver voice and broadband data services to previously difficult to serve areas in the state.”⁴⁶ WindChannel Communications announced in December 2003 its roll-out of fixed wireless broadband in downtown Durham, N.C.⁴⁷ In November 2003, Adams NetWorks deployed fixed-wireless non-line-of-sight

(FCC filed Sept. 3, 2003) (citing Alvairon, Inc., *The License-Exempt Wireless Broadband Market* at 8 (Apr. 2003)) (“*LEA Comments*”). The Commission’s own *High-Speed Services Report* counts only 309,006 high-speed lines provided through “satellite or fixed wireless” as of June 2003, but this is likely due to the fact that the many fixed wireless lines are provided in rural areas by small providers. As the Commission notes, “we do not know how comprehensively small providers, many of which serve rural areas with relatively small populations, are represented in the data summarized here.” *High-Speed Services Report* at 2.

⁴² *WISPs Buck Investment Trends*, ISP-Planet (Nov. 12, 2002), http://www.isp-planet.com/research/2002/vc_trends_021112.html.

⁴³ NextNet Wireless News Release, *NextNet and Regional Service Providers Launch NLOS Broadband Wireless Services in Ohio, Michigan and Nebraska* (May 17, 2004). W.A.T.C.H. TV is an MMDS provider with over 10,000 customers in Ohio. SpeedNet holds MMDS licenses covering 500,000 households in northeast and mid-Michigan. Gryphon Wireless is an ITFS carrier “targeting 87,000 residential and SOHO subscribers in underserved markets” in Kearney, Neb. and the surrounding area. *Id.*

⁴⁴ NextNet Wireless News Release, *America Connect and NextNet Announce Successful Launch of Non-Line-of-Sight Broadband Wireless Trial at 2.3 GHz* (Jan. 21, 2004). The NextNet system has also been deployed by ISPs in Arizona, Iowa, Minnesota, and New Mexico. NextNet Wireless News Release, *NextNet and Regional Service Providers Launch NLOS Broadband Wireless Services in Ohio, Michigan and Nebraska* (May 17, 2004). NextNet was recently acquired by an organization backed by Craig McCaw. *See NextNet Bought by Cell-Phone Tycoon*, Minneapolis St. Paul Bus. J. at 1 (Apr. 23, 2004).

⁴⁵ NTELOS Press Release (Jan. 6, 2004), http://www.wcai.com/pdf/2004/mds_ntelosJan6.pdf. Portable Broadband will be available to approximately 50,000 households in these three cities. *Id.* NTELOS plans to expand the system later this year “to Lynchburg, VA, as well as fill out coverage in Charlottesville, and Waynesboro.” *Id.* The service offers “download speeds up to 1.5 Mbps, and upload speeds up to 550 Kbps” with prices starting at \$49.95 per month. Consumers can use the service to receive high-speed connection both from their homes, but also from “anywhere within the coverage area” using the “added flexibility of un-tethered non-line-of-sight access” that is “truly plug-and-play, requiring no external antenna.” *Id.*

⁴⁶ SR Telecom News Release, *SR Telecom’s Stride2400 Selected for Voice and Internet Project in U.S.* (Dec. 11, 2003) (Its last-mile access technology is used both for voice services as well as broadband and “provides excellent performance over long spans (11 miles) . . . resulting in reduced infrastructure deployment costs.”).

⁴⁷ *WindChannel Expands; Brings Fixed Wireless Broadband Access to the EPA and Others in Durham and the Research Triangle Park*, Business Wire (Dec. 22, 2003).

broadband services to four communities in Illinois and Missouri, and has plans to expand its networks into an additional twelve communities in 2004.⁴⁸

A number of recent fixed wireless roll-outs and trials – including by NTELOS, W.A.T.C.H. TV, Gryphon Wireless, and America Connect – have been targeted at business customers as well as residential ones.⁴⁹ According to In-Stat/MDR, more small businesses are now using fixed wireless (22 percent of SOHO businesses and 23 percent of small businesses) than ADSL (18 percent and 23 percent, respectively).⁵⁰ In-Stat/MDR also expects 35 percent of small businesses and 39 percent of SOHO businesses to begin using fixed wireless within the next 12 months.⁵¹

As these deployments make clear, there has been a recent surge of investment in fixed wireless. Fixed wireless providers are now “attracting significant amounts of financing from venture capital private capital investments.”⁵² There has likewise been significant investment by equipment suppliers.⁵³ For example, Intel and Nokia have begun aggressively promoting the technology.⁵⁴ Established telecom firms like Nextel also have recently invested in fixed

⁴⁸ WaveRider Communications, Inc. News Release, *Adams NetWorks, Inc. Expands Its NetVelocity Service With WaveRider's Last Mile Solution* (Nov. 24, 2003). The WaveRider system boast speeds of up to 2.0 Mbps in a two-mile range in non-line-of-sight conditions with indoor antennas. With outdoor antennas, WaveRider's products delivers speeds of 2.0 Mbps at a range of up to five miles in non-line-of-sight conditions, and up to 25 miles with a line-of-sight connection. *See id.*

⁴⁹ *See, e.g.*, NTELOS Press Release (Jan. 6, 2004) (announcing “initial commercial deployment of ‘Portable Broadband,’ high speed-Internet access to go” “for business and residential users.”); NextNet Wireless News Release, *NextNet and Regional Service Providers Launch NLOS Broadband Wireless Services in Ohio, Michigan and Nebraska* (May 17, 2004) (W.A.T.C.H. TV launched broadband wireless services “for business and residential subscribers in Lima, Ohio on May 1;” Gryphon Wireless offers “a broadband alternative to SOHO and residential subscribers.”); NextNet Wireless News Release, *America Connect and NextNet Announce Successful Launch of Non-Line-of-Sight Broadband Wireless Trial at 2.3 GHz* (Jan. 21, 2004) (reporting the success of a fixed wireless trial in Granville County, N.C. NextNet and America Connect are working “toward the goal of creating new opportunities for business and residential populations in the Southeast.”) (quoting NextNet president and CEO Guy Kelnhofer).

⁵⁰ *In-Stat/MDR December 2003 Study* at 19, Table 10.

⁵¹ *Id.*

⁵² *WISPs Buck Investment Trends*, ISP-Planet (Nov. 12, 2003), http://www.isp-planet.com/research/2002/vc_trends_021112.html; K. Beckman, *WorldCom MMDS Assets Go to BellSouth*, RCR Wireless News (May 19, 2003) (“Several fixed-wireless vendors have received investments during the past several months.”); C. Nolter, *BellSouth Bids for WorldCom Unit*, Daily Deal (May 13, 2003) (“Since December, IPWireless, Aperto Networks and Soma Networks have received infusions from venture capital firms, [Yankee Group’s Linda] Schroth wrote.”); C.D. Marsan, *AirBand Attracts Venture Capital Largesse*, Network World ISP News Report Newsletter (Sept. 24, 2003) (AirBand, a WISP using fixed wireless technology to deliver broadband services in the Southwest, raised \$10.5 million from a group of venture capital firms in the first half of 2003).

⁵³ *See, e.g.*, *Motorola Canopy(TM) Wireless Broadband Portfolio Expands with New 2.4GHz Product*, PR Newswire (Dec. 15, 2003); *Athena Semiconductors Closes Series B \$10 Million Funding Round Led by Samsung*, Business Wire (Dec. 17, 2003); *Trango Broadband M900S 900MHz System Gains FCC Approval; Low Cost, Non-Line-of Sight Wireless Broadband Solution is Ready for Market*, Business Wire (Jan. 7, 2004); *Airspan Announces New Range of 802.16 OFDM Products*, Business Wire (Oct. 31, 2003).

⁵⁴ *See, e.g.*, M. Angell, *Techs Again Tout Fixed Wireless*, Investor’s Business Daily at A06 (May 7, 2003) (“Now a group of tech companies, including Intel Corp. and Nokia Corp., wants to revive fixed wireless technology.”); *Intel, Nokia, Proxim, Others Launch WiMax*, TMCnet.com News (Apr. 11, 2003) (“Intel, Nokia,

wireless.⁵⁵ According to one recent estimate, the U.S. market for broadband wireless access services is expected to grow to \$3.7 billion within five years.⁵⁶ Not surprisingly, the stocks of both fixed wireless providers and equipment suppliers have risen steadily over the past year.⁵⁷

This renaissance in fixed wireless is due to the fact that its underlying technology and economics have improved considerably. One major development is the adoption of an industry-wide standard for fixed wireless broadband – IEEE 802.16a (commonly known as WiMax)– that is designed to provide “a wireless alternative to cable, DSL and T1/E1 for last mile broadband access,” and that can “also be used as complimentary technology to connect 802.11 [*i.e.*, Wi-Fi] hot spots to the Internet.”⁵⁸ The new standard enables fixed wireless to be used for high-speed data transmission over much greater distances than previous standards – “up to 30 miles, with a typical cell radius of 4-6 miles.”⁵⁹ It also “allows users to get broadband connectivity without needing direct line of sight with the base station,” a major limitation of previous generations of

Proxim, and a host of other companies yesterday launched WiMax, a non-profit group formed to certify and promote the developing wireless broadband standard 802.16.”); M. Hachman, *Intel To Ship WiMAX Products in 2004*, EWeek (Sept. 18, 2003) (“Intel Corp. will produce integrated products that meet the 802.16 WiMAX specification by mid-2004.”); R. Kay, *WiMax*, Computerworld (Dec. 1, 2003) (“Intel has now promised WiMax versions of its Centrino chip set for 2004, whereas Nokia says it will have battery and other technical issues solved in time to launch a WiMax cell phone in 2005.”).

⁵⁵ Nextel recently purchased MMDS spectrum from WorldCom and Nucentrix, and has already moved well into trials of WiMAX technology. Nextel cited two potential applications for WiMAX: as an enterprise solution for offering integrated Wi-Fi, cellular and WiMAX systems; and as a parallel data network, which would allow Nextel to reach remote areas. See C. Nolter, *Nextel Wins Nucentrix Spectrum*, Daily Deal (Nov. 7, 2003); G. Williams, *Nextel Communications Acquires Wireless Assets*, World Markets Analysis (Nov. 10, 2003); *Nextel May Be First Major WiMAX Operator*, Blueprint Wi-Fi (Nov. 26, 2003), http://www.rethinkresearch.biz/free_page_view.asp?crypt=%B3%9C%C2%97%8C%84%86%AF%BC%C2%88%97kvn%91; see also V. Lipset, *Operators Wary of WiMax*, Study Says, Wi-Fi Planet (Nov. 19, 2003), <http://www.wi-fiplanet.com/news/article.php/3111361>. Nextel is testing a wireless broadband service using the 802.20, “Mobile Fi” standard, across a coverage area of approximately 1,300 square miles in North Carolina’s Research Triangle. Nextel News Release, *Nextel Expands Successful Broadband Trial To Include Paying Customers and Larger Coverage Area* (Apr. 14, 2004).

⁵⁶ Senza-Fili Consulting Press Release, *WiMAX Poised To Dominate US\$3.7bn Market for Broadband Wireless Access* (Apr. 21, 2004) (citing a new study by BWCS and Senza-Fili Consulting). See also R. Kay, *WiMax*, Computerworld at 34 (Dec. 1, 2003) (“Visant Strategies Inc., a market research firm in Kings Park, N.Y., predicts that WiMax product sales will reach \$1 billion by 2008. According to Oyster Bay, N.Y.-based ABI Research, the market for long-range wireless products based on 802.16 and the forthcoming 802.20 standard will reach \$1.5 billion by 2008.”).

⁵⁷ For example, the stocks of fixed wireless equipment providers Alvarion (ALVR), California Amplifier (CAMP), Proxim (PROX), Endwave (ENWV), and Stratex Networks (STXN) rose 492 percent, 163 percent, 104 percent, 718 percent, and 65 percent, respectively, between January 2, 2003 and December 31, 2003. See Yahoo! Finance, *Historical Prices and Company Profile*, <http://finance.yahoo.com> (closing prices).

⁵⁸ See WIMAX Forum, *WIMAX Overview* at 1, available at <http://www.wimaxforum.org> (“WIMAX Overview”). The standard was approved by the IEEE and released January 29, 2003. WIMAX Forum, *WIMAX FAQs* at 1, available at <http://www.wimaxforum.org> (“WIMAX FAQs”). Initial vendor tests are scheduled for the third quarter of 2004, *WIMAX Overview* at 2, and certified equipment is expected in the market by the second half of 2004, *WIMAX FAQs* at 2.

⁵⁹ *LEA Comments* at 4; D. Pescovitz, *10 Technologies To Watch in 2004*, CNN.com (Dec. 25, 2003), <http://www.cnn.com/2003/TECH/ptech/12/23/bus2.feat.tech.towatch> (“802.16: WiMax enables wireless networks to extend as far as 30 miles and transfer data, voice, and video at faster speeds than cable or DSL. It’s perfect for ISPs that want to expand into sparsely populated areas, where the cost of bringing in DSL or cable wiring is too high.”).

fixed-wireless technology.⁶⁰ The adoption of a common standard and the fact that the technology is maturing also have caused the costs of deploying fixed wireless to drop.⁶¹ As one industry observer notes, “[f]irms like Winstar and Teligent ‘used nonstandard gear,’ . . . ‘Once it becomes standardized, that brings down the cost.’”⁶² The new standard also enables operators to build scale more easily.⁶³ It is now estimated that these advances could make “last-mile WiMAX connections cheaper than cable and DSL solutions.”⁶⁴

2. Broadband over Power Lines

According to Chairman Powell, “Broadband over Power Line [BPL] has the potential to provide consumers with a ubiquitous third broadband pipe to the home.”⁶⁵ Recent evidence confirms the near-term promise of this emerging broadband alternative. At least two commercial BPL rollouts are currently underway – one in Manassas, Va., the other in Cincinnati, Ohio.⁶⁶

⁶⁰ *WiMAX Overview* at 2; *Strategy Analytics: Fixed Wireless Broadband Heads Home*, M2 Presswire (Nov. 19, 2003) (“Advances in the underlying technology have relaxed the line-of-sight constraints that used to make residential installations an expensive and uncertain proposition,” says Tom Elliott, Vice President of Consulting with Strategy Analytics.”); *see also id.* (A single base station “provides total data rates of up to 280 Mbps . . . which is enough bandwidth to simultaneously support hundreds of businesses with T1/E1-type connectivity and thousands of homes with DSL-type connectivity.”); Intel Corp., White Paper, *IEEE 802.16 and WiMAX – Broadband Access for Everyone* at 3 (2003) (“a single ‘sector’ of an 802.16(a) base station . . . provides sufficient bandwidth to simultaneously support more than 60 businesses with T1 connectivity.”).

⁶¹ M. Angell, *Techs Again Tout Fixed Wireless*, Investor’s Business Daily at A06 (May 7, 2003) (“‘With a standard in place, that makes for a better selection of chips and should bring down the price of the technology,’ said Margaret LaBrecque, president of the newly established WiMax Forum. LaBrecque also serves as marketing manager for Intel’s broadband wireless group.”); D. Molta, *[News Without the Noise] – 802.16a: Sedan or Mack Truck?* Network Computing (Aug. 7, 2003) (“As IEEE standardizes on a metropolitan wireless MAC interface and WiMax pushes the OFDM physical-layer interface, it’s predictable that the cost of base-station equipment and subscriber modems will come down.”); *Fixed Wireless as Residential Access Sees Renewed Life*, Electronic News (Nov. 24, 2003) (“Reduced equipment costs, improved performance, and an aggressive set of vendors and wireless ISPs are making fixed wireless a serious broadband contender in rural towns and urban fringes.”) (quoting Tom Elliott, VP, Strategy Analytics).

⁶² M. Angell, *Techs Again Tout Fixed Wireless*, Investor’s Business Daily at A06 (May 7, 2003) (quoting Roger Marks, Chair, 802.16 Working Group); *see also* M. Hogan, *To the WiMAX: A New Protocol Spices Up the 802.X Alphabet Soup*, Entrepreneur (Dec. 1, 2003) (“WiMAX equipment could cost less than a quarter of current technology, with prices starting under \$ 2,000.”) (citing Intel marketing manager Margaret LaBrecque).

⁶³ *WiMAX Overview* at 3 (“Easy addition of new sectors supported with flexible channels maximizes cell capacity, allowing operators to scale the network as the customer base grows.”).

⁶⁴ M. Hogan, *To the WiMAX: A New Protocol Spices Up the 802.X Alphabet Soup*, Entrepreneur (Dec. 1, 2003) (citing Intel marketing manager Margaret LaBrecque); *see also* M. Stone & D. Chang, *Great Expectations for WiMAX*, Wireless Data News (Dec. 17, 2003) (“It’s true that WiMAX infrastructure likely will be less expensive than existing infrastructure, and the lower entry costs will encourage new market entrants.”).

⁶⁵ *Inquiry Regarding Carrier Current Systems, including Broadband over Power Line Systems*, Notice of Inquiry, 18 FCC Rcd 8498, Separate Statement of Chairman Michael K. Powell (2003); *see also* *Broadband*, National Journal’s Technology Daily (Dec. 16, 2003).

⁶⁶ *See Plug into the Internet via Prospect Street Broadband*, Utility Connection at 2 (Feb. 2004), http://www.manassascity.org/documents/Utilities/Utility%20Connection/Utility%201_04.pdf (Prospect St. Broadband’s “Zplug” service “was activated in portions of the Wellington and Battery Heights neighborhoods [in Manassas, Va.] in January, and will soon be available in other areas.”); D. Kumar, *Utilities Revise Broadband-over-Power-Line Rollout Schedules*, Comm. Daily (Dec. 9, 2003) (“[O]nce the [network build-out] is completed in mid-

Other commercial BPL rollouts are planned or will be considered in the coming months.⁶⁷ BPL trials have been conducted in at least eight states by some of the nation's largest utility providers.⁶⁸ It is estimated that "one-third of electric utility companies are considering or already using BPL."⁶⁹ The Power Line Communications Association estimates that "broadband over power line will reach between 750,000 and 1 million customers by the end of 2004."⁷⁰ Independent industry analysts estimate that "BPL will encompass six million power lines by 2006, promising revenues of \$3.5 billion."⁷¹

2004, [the city] expects to provide service to all 15,000 electric customers."); S. Kreiger, *Innovative Web Access To Shock Manassas*, Potomacnews.com (Oct. 18, 2003); *Cinergy and Current Communications To Offer Broadband Services over Power Lines*, Business Wire (Mar. 2, 2004) (announcing that companies "are beginning to offer broadband over power line (BPL) services in the greater Cincinnati, Ohio area"); D. Kumar, *Utilities Revise Broadband-over-Power-Line Rollout Schedules*, Comm. Daily (Dec. 9, 2003) ("Under current plans, Cinergy will pass 30,000-40,000 homes in Ohio in the first year and 250,000 in 3 years.").

⁶⁷ See, e.g., *Muni in Upstate New York Views BPL Project as Plan with Little Risk, Plenty of Potential*, Electric Utility Week (Dec. 1, 2003) ("DVI intends to . . . begin sales to Penn Yan's 3,000 customers, which include 355 commercial customers, in January, said Marc Burling, CEO of DVI."); D. Kumar, *Utilities Revise Broadband-over-Power-Line Rollout Schedules*, Comm. Daily (Dec. 9, 2003) ("[IdaComm] CEO Chris Britton said the technical trials would take another 2-3 months to complete, after which a market trial, which was larger in scope, was planned: 'So we will make a decision on going commercial probably in the summer of 2004.'"); *Cinergy and Current Communications To Offer Broadband Services over Power Lines*, Business Wire (Mar. 2, 2004) (BPL "expansion is planned for Northern Kentucky and Indiana").

⁶⁸ D.T. Dang, *Utilities Test Potentially Revolutionary High-Speed Data Transmission System*, Baltimore Sun (May 11, 2003) ("such as Ohio's American Electric Power, New York's Consolidated Edison and Pennsylvania Power and Light"); Amperion, Inc. Press Release, *Amperion, Inc. Announces Powerline Communications Testing Agreement with PPL Electric Utilities* (Sept. 23, 2002); Amperion, Inc. Press Release, *Amperion Announces High-Speed Powerline Trial with Progress Energy* (May 1, 2003); Current Technologies, LLC Press Release, *Cinergy and Current Technologies Conduct 100-Home Test Market of the Current Technologies Powerline Communications in Ohio* (June 24, 2002); Current Technologies, LLC Press Release, *FCC Chairman Powell Visits Current Technologies Broadband over Power Line Network in Potomac, Maryland* (April 9, 2003); *Comments of Ameren Energy Communications, Inc. at 2, Inquiry Regarding Carrier Current Systems, including Broadband over Power Line Systems*, ET Docket No. 03-104 (FCC filed July 7, 2003); IDACOMM Press Release, *Amperion and IDACOMM Launch Broadband Over Powerline (BPL) Pilot in Boise, Idaho* (Jan. 6, 2004); *Comments of Main.net Communications, Ltd. at 3, Inquiry Regarding Carrier Current Systems, including Broadband over Power Line Systems*, ET Docket No. 03-104 (FCC filed July 7, 2003); *Comments of Hawaiian Electric Company, Inc. at 1, Inquiry Regarding Carrier Current Systems, including Broadband over Power Line Systems*, ET Docket No. 03-104 (FCC filed July 2, 2003); Wall Street Transcript Corp., Investext Rpt No. 8707372, CEO Interview: Joan Freilich – Consolidated Edison Inc. – Company Report at *4 (May 2, 2003); *Muni in Upstate New York Views BPL Project As Plan with Little Risk, Plenty of Potential*, Electric Utility Week (Dec. 1, 2003). See also *Inquiry Regarding Carrier Current Systems, including Broadband over Power Line Systems*, Notice of Inquiry, 18 FCC Rcd 8498, Separate Statement of Chairman Michael K. Powell (2003) ("Power line networks are being tested today in a dozen states around the country and are a testament to the incredible innovations taking place in broadband network technologies.").

⁶⁹ J. Breen, et al., Thomas Weisel Partners, *Broadband over Power Lines: Finally . . . After All Those Years at 2* (May 3, 2004) ("*Thomas Weisel BPL Report*").

⁷⁰ W. Rodgers, *Power To Interfere?*, Tampa Tribune, MoneySense at 10 (Jan. 5, 2004). In February 2004, EarthLink invested \$500,000 in BPL provider Ambient; EarthLink had teamed with Ambient in its BPL pilot with Con Edison. See Comm. Daily (Feb. 23, 2004).

⁷¹ *At CompTel Fall 2003: What's The Next Big Thing*, Comm. Today (Oct. 13, 2003) (citing Gartner Group research).

The economics of deploying BPL are now very favorable, and technological hurdles have been overcome. The core infrastructure – power lines that extend to virtually every home and business in the nation – is already in place. Beyond that, “the cost for additional equipment ranges from about \$50 to \$250 per home passed, depending on housing density,” which is “substantially less than the cost of introducing cable modem or DSL service in new areas.”⁷² Installation is inexpensive and quick. “A utility worker can connect a piece of communications equipment to a medium-voltage line in about 10 minutes.”⁷³ And, “[i]n most cases, there is no need to send a truck or utility worker to each home to set up equipment. A consumer needs only to plug in a \$70 power line modem, typically used for home networking.”⁷⁴ Technological hurdles “also have now been economically cleared.”⁷⁵ For example, transmitting a signal through power transformers, “one of the biggest obstacles to making power line communications work,”⁷⁶ can now be circumvented by no fewer than three different methods.⁷⁷

BPL can be used to provide high-speed access at speeds comparable to or faster than DSL and cable, and at comparable prices.⁷⁸ Cinergy noted that its “[h]igh-speed Internet access in the trials achieve[d] speeds over 2 megabits/second.”⁷⁹ Companies plan to sell BPL service at

⁷² C. Berg, *PPL Tests Broadband Internet Service*, Morning Call at A1 (Apr. 27, 2003); see also P. Davidson, *High-speed Net Coming to a Plug Near You?*, USA Today (Apr. 14, 2003) (“Costs recently have fallen to \$50 to \$160 per home passed, suppliers say. ‘The breakthrough is that cheaper silicon has made this possible on a large scale,’ says Amperion CEO Philip Hunt. This is much cheaper than what cable and phone giants had to spend beefing up their networks with fiber or copper, as well as adding broadband gear. At first, they spent \$750 to \$1,000 per home passed, though costs lately have fallen to \$200 to \$400, Jupiter’s Joe Laszlo says.”).

⁷³ *Tampa, Fla.-Area Electric Utility May Offer New Outlet for Broadband*, Tampa Tribune (Oct. 6, 2003); *id.* (“BPL is cheap to install.”).

⁷⁴ D.T. Dang, *Utilities Test Potentially Revolutionary High-Speed Data Transmission System*, Baltimore Sun (May 11, 2003).

⁷⁵ Comments of Current Technologies, LLC. at 4, *Inquiry Regarding Carrier Current Systems, including Broadband over Power Line Systems*, ET Docket No. 03-104 (FCC filed July 7, 2003); see also J. Mears, *Broadband over Power Lines Closer to Reality*, Network World (June 2, 2003) (“Today, companies . . . have developed technology to move bits across medium- and low-voltage lines.”).

⁷⁶ C. Berg, *PPL Tests Broadband Internet Service*, Morning Call at A1 (Apr. 27, 2003); see also P. Davidson, *High-speed Net Coming to a Plug Near You?*, USA Today (Apr. 14, 2003) (“The biggest roadblock, however, is the transformer that converts medium-voltage current (10,000 to 69,000 volts) to the low voltages (220/110) that enter your home. It can swallow data signals whole.”).

⁷⁷ See P. Davidson, *High-speed Net Coming to a Plug Near You?*, USA Today (Apr. 14, 2003) (“Ambient and Current Technologies bypass the transformer with a special wire that carries the data, while only electric current passes through the transformer. Main.Net relies on packet-chopping technology to slip the data intact through the trash-can-sized transformer. And Amperion’s Wi-Fi antennas wirelessly link the Internet signal to the customer before it gets to the transformer.”); see also C. Berg, *PPL Tests Broadband Internet Service*, Morning Call at A1 (Apr. 27, 2003).

⁷⁸ See D. Kumar, *Utilities Revise Broadband-over-Power-Line Rollout Schedules*, Comm. Daily (Dec. 9, 2003) (“symmetrical speeds of 1.5 Mbps to 2 Mbps”); C. Berg, *PPL Tests Broadband Internet Service*, Morning Call at A1 (Apr. 27, 2003) (“[Main.net President Joe] Marsilii said Main.net’s system can achieve speeds up to 1.8 megabits per second – faster than DSL and about as fast as the best cable modems. And, he said, the next generation of technology will be five times faster than that.”).

⁷⁹ Comments of Cinergy Corp. at 1-2, *Inquiry Regarding Carrier Current Systems, including Broadband over Power Line Systems*, ET Docket No. 03-104 (FCC filed July 7, 2003).

rates comparable to or less than those of other access services.⁸⁰ For example, Prospect Street Broadband, the company with which the City of Manassas has partnered in the nation's first commercial BPL rollout, offers residential high-speed Internet access for only \$26.95 per month.⁸¹

3. Satellite

Satellite is another broadband alternative that has begun a resurgence. As one industry observer has noted, "satellite broadband will be on the upswing again in 2004."⁸²

One of the two main broadband satellite providers – Hughes Network Systems – reported 180,000 customers for its DIRECWAY service as of year-end 2003.⁸³ The recently approved merger between General Motors/Hughes and News Corp.⁸⁴ will allow News Corp. to "work aggressively to ensure that broadband services are available to as many American consumers as possible. . . . News Corp. believes it is critical that consumers have a vibrant set of broadband choices that compete with cable's video and broadband services on capability, quality, and price."⁸⁵ In October 2003, MCI began reselling Hughes's DIRECWAY service to "small-to-medium businesses and enterprises."⁸⁶ MCI notes that "with today's broadband satellite technology . . . you can connect remote employees and offices wirelessly while experiencing the

⁸⁰ See, e.g., *Muni in Upstate New York Views BPL Project as Plan with Little Risk, Plenty of Potential*, Electric Utility Week (Dec. 1, 2003) ("[DVI] plans to offer basic Internet service to residents for \$29.95/month, with business customers paying \$89.95/month at speeds that are comparable to digital subscriber line and cable Internet service"); S. Strangmeier, *Consumers to Surf Power Lines*, Natural Gas Week (Dec. 5, 2003) ("BPL proponents claim it costs less than major cable and telephone services at about \$29.95/month."); C. Berg, *PPL Tests Broadband Internet Service*, Morning Call at A1 (Apr. 27, 2003) ("[P]ower line communications will be significantly cheaper than its competitors."); A. Szoke, *Electric Utilities Try to Plug in to High-Speed Internet in Peoria, Ill., Area*, Journal Star (Apr. 22, 2003) ("Some utilities have said they may be able to offer [BPL] at a cost of \$30 to \$40 a month for residential users compared to the \$40 to \$50 average monthly charge for broadband.").

⁸¹ See Prospect Street Broadband, *Products and Services*, <http://www.prospectstreet.com/psb/Products/ResidentialServices.htm>; D. Kumar, *Utilities Revise Broadband-over-Power-Line Rollout Schedules*, Comm. Daily (Dec. 9, 2003).

⁸² R. Brown, *et al.*, *Smooth Sailing or the Perfect Storm?*, CED (Jan. 1, 2004); see also *ISCE Panelists See Big Satellite Broadband Growth*, Satellite Week (Aug. 25, 2003) ("Michael Agnostelli, SES Americom vp-business strategy, said that for the first time DBS TV services cost less...than cable TV. 'There's no reason satellite broadband can't cost less than [DSL or cable modem],' he said: 'The technology is well positioned to hit the cost point and performance point that consumers are looking for.'").

⁸³ DirecTV Group Inc., Form 10-K (SEC filed Mar. 17, 2004) (residential and small office/home-office customers in North America).

⁸⁴ *General Motors Corp. and Hughes Electronics Corp., Transferors, and The News Corp. Ltd., Transferee*, Memorandum Opinion and Order, MB Docket No. 03-124, FCC 03-330 (rel. Jan. 14, 2004).

⁸⁵ Consolidated Application for Authority to Transfer Control at 31, *Application of General Motors Corp. and Hughes Electronics Corp., Transferors, and The News Corp. Ltd., Transferee*, MB Docket No. 03-124 (FCC filed May 15, 2003).

⁸⁶ MCI, *Enterprise, Internet Broadband Satellite*, <http://global.mci.com/us/enterprise/internet/broadbandsat/>.

same advantages that many terrestrial options offers, such as speed, security and reasonable costs.”⁸⁷

The other main satellite provider – StarBand – emerged from bankruptcy in November 2003 with most of its customer base intact.⁸⁸ The company has introduced new hardware and service offerings targeted at mass-market customers that offer lower prices and higher speeds than were previously available.⁸⁹ StarBand’s residential service begins at \$50 a month. *See* Table 5.

Finally, WildBlue Communications plans to introduce broadband satellite service in the Ka-band during 2004.⁹⁰ The National Rural Telecommunications Cooperative (NRTC) has agreed to a distribution partnership with WildBlue, and members of NRTC will offer WildBlue’s service across the country.⁹¹ According to NRTC President and COO Bob Phillips, “[NRTC is] confident that WildBlue is the best solution to deliver affordable high-speed satellite Internet access to rural America,” and that “virtually every home and small business in the continental United States will finally have access to the most advanced telecommunications services available.”⁹²

4. 3G Mobile Wireless

In recent months, third-generation (“3G”) wireless services have taken another step closer to becoming a full-fledged competitor in the broadband market. These new 3G networks rely on IP in place of traditional communications protocols used on wireless networks,⁹³ enabling

⁸⁷ *Id.*

⁸⁸ *Starband to Emerge from Bankruptcy Protection by Month’s End*, Satellite Week (Nov. 24, 2003) (“Starband is expected to emerge from bankruptcy protection late this month with a revamped sales staff. . . . Starband has 38,000 subscribers, having lost 2,000 since filing for bankruptcy protection in U.S. Dist. Court, Wilmington, Del., in May 2002.”).

⁸⁹ *See, e.g., StarBand Unveils Faster Modem*, Satellite News (Aug. 4, 2003) (“StarBand . . . has introduced a modem designed to provide peak download speeds of up to one megabit per second (Mbps) and upload speeds of 100 kilobits per second (Kbps.)”); *Starband to Emerge from Bankruptcy Protection by Month’s End*, Satellite Week (Nov. 24, 2003) ([Starband] recently introduced model 480 Pro satellite modem that’s designed for small-business market . . . will be priced at \$899 with a one-year contract carrying a \$149 monthly fee; \$599 with 2- and 3-year pacts that have \$149 and \$139 monthly charges. On the consumer side, Starband will continue with the model 360 satellite modem and price ranging from a starter kit at \$699 with a one-year contract and a \$39 monthly fee that provides download speeds up to 250 kbps to \$199-\$699 standard plans that are based on 2- and 3-year contracts. The 2- and 3-year agreements charge \$99 a month for the first year, then drop to \$59 and \$49, respectively.).

⁹⁰ WildBlue Communications Press Release, *NRTC to Offer WildBlue Satellite Broadband Services* (Aug. 25, 2003) (“WildBlue will deliver affordable two-way wireless broadband services via satellite, direct to homes and small offices, throughout the continental United States in 2004. WildBlue is expected to be the first to launch the Ka-band spot beam satellite technology designed to lower the cost of providing consumers high-speed Internet access via satellite. The WildBlue system also will leverage proven terrestrial cable modem technology, resulting in lower customer equipment and installation costs; a critical requirement in satellite-based consumer services.”); R. Brown, *et al., Smooth Sailing or Perfect Storm?*, CED (Jan. 1, 2004).

⁹¹ WildBlue Communications Press Release, *NRTC to Offer WildBlue Satellite Broadband Services* (Aug. 25, 2003).

⁹² *Id.*

⁹³ *See, e.g., Internet Protocol Phone: Communication is a Necessity*, BusinessWorld (Jan. 27, 2004) (“IP is

providers to offer advanced wireless features. One new feature that wireless providers hope to provide is Push-To-Talk,⁹⁴ which is a service that one wireless provider – Nextel – currently dominates.⁹⁵ These new wireless networks also are expected to greatly increase the use of wireless networks for data transmission,⁹⁶ and to compete directly with fixed broadband services such as cable modem and DSL in the provision of high-speed Internet access.⁹⁷

In September 2003, Verizon Wireless launched a 3G wireless network in Washington, DC and San Diego.⁹⁸ Verizon's 3G service using EvDO technology provides Internet access at speeds of 300-500 kbps, with bursts up to 2 Mbps.⁹⁹ As one analyst notes, the download speeds of EvDO networks are "comparable to those of DSL and cable modems."¹⁰⁰ In January 2004, Verizon announced that it will spend over \$1 billion deploying its EvDO network over the next two years, allowing it to reach many major metropolitan areas across the country.¹⁰¹ This puts pressure on other wireless providers to follow suit.

AT&T Wireless has announced plans to deploy next-generation W-CDMA technology capable of providing download speeds of 384 kbps in four cities by the end of 2004.¹⁰² Sprint

the basis of the internet, and the standard that will eventually be used for most wireless 3G (third generation) network infrastructure.”).

⁹⁴ See, e.g., S. Flannery, *et al.*, Morgan Stanley, *Nextel: Quick Comment: Mixed Quarter, Churn Ticks Up* at 2 (Apr. 22, 2004) (“Cingular plans to become the fourth national carrier to offer [Push To Talk] with a launch this quarter.”); R. Prentiss, *et al.*, Raymond James, *AT&T Wireless* at 4 (Apr. 26, 2004) (“[AT&T Wireless] is rethinking when to launch [Push to Talk] The reason behind the delay is not just to save capital but also to have a coordinated effort for inter (non-iDEN) carrier capability (i.e., push-to-talk calls between customers from other carriers).”).

⁹⁵ See, e.g., B. Bath, Lehman Brothers, *Wireless Services Industry Update: CTIA – Carriers Bullish on 04 Data* at 1 (Mar. 25, 2004) (“Nextel currently retains a significant lead over its competitors”).

⁹⁶ See, e.g., 10 Downing Street Press Release, *Strategy To Deliver Best Outcomes for Consumers from the Competition in Electronic Networks* (Dec. 2, 2002) (“New wireless networks, including 3G, are expected to complement wired networks for data transmission, but not to replace them.”); *At Last, 3G Rollouts Show More Boom Than Bust*, Wireless Data News (Dec. 17, 2003) (“‘The next generation of CDMA architecture will be driven by person-to-person communications,’ said Adam Gould, CTO of CDMA for Nokia Mobile Phones. ‘We’ll see an evolution of voice services first, then higher-quality packet switching and then music. Data will go from downloads to more person-to-person without a fixed, PC-like IP address.’”).

⁹⁷ *Merrill Lynch, Everything over IP* at 36 (“Pressure [from IP wireless] is likely to be felt in two directions, with fixed broadband and VoIP services (such as WiFi) cutting into the mobile opportunity, and mobile broadband services potentially taking some of the [High-Speed Data] market opportunity.”).

⁹⁸ Verizon Wireless Press Release, *Wireless Broadband Data Service Introduced in Major Metro Areas* (Sept. 29, 2003).

⁹⁹ Verizon Wireless Press Release, *Verizon Wireless Announces Roll Out of National 3G Network* (Jan. 8, 2004).

¹⁰⁰ B. Richards, *et al.*, CIBC World Markets, Investext Rpt. No. 7305232, *Sierra Wireless Inc. – Company Report* at *2 (Mar. 6, 2003).

¹⁰¹ Verizon Wireless Press Release, *Verizon Wireless Announces Roll Out of National 3G Network* (Jan. 8, 2004); V. Mamelak, Netaxis Bleichroeder, *Verizon* at 3 (Dec. 1, 2003).

¹⁰² AT&T Wireless Press Release, *AT&T Wireless Outlines Actions It Will Take to Meet 2003 Goals* (Jan. 28, 2003) (announcing plans to rollout W-CDMA in four cities (Dallas, San Diego, San Francisco, and Seattle) by year end 2004); G. Lynch, *Dropping EDGE Could Regain Edge for AT&T, America’s Network* (Feb. 1, 2001).

has begun conducting trials of EvDO.¹⁰³ Nextel is conducting a trial of Flarion's next-generation wireless platform, which provides bandwidth of between 1-3 Mbps.¹⁰⁴

C. There Is Extensive Broadband Competition for Large Business Customers

Recent evidence also confirms that there is extensive competition for broadband services provided to large business customers. As Verizon has previously explained, this segment of the broadband market differs from other segments both because it is more mature, with competitors having first entered the market two decades ago, and because it is national in scope.¹⁰⁵ As the Commission has found, it is comprised of customers that typically demand end-to-end services provided across LATAs, states, and often countries.¹⁰⁶

A January 2004 report by Schwab Soundview Capital Markets provides further confirmation of this, and shows that it is AT&T and the other large interexchange carriers – not the ILECs – that dominate this segment of the market. As the report notes, “ATM and frame relay services constitute the majority of telecom spending by businesses and nearly 85% of revenue opportunity within ATM and frame relay services is in long distance service offerings.”¹⁰⁷ This analyst notes that, as of January 2004, AT&T, MCI, and Sprint together controlled 79 percent of the Frame Relay market and 60 percent of the ATM market.¹⁰⁸ And because the Frame Relay market is much larger than the ATM market, these companies' share of the combined market for broadband services provided to large businesses is approximately 75 percent.¹⁰⁹ AT&T's Chairman has boasted that his company is the nation's “largest private line/frame relay/ATM provider.”¹¹⁰

Although some parties have argued that the IXC's often provide Frame Relay and ATM services using facilities obtained from ILECs, the fact that these carriers have nonetheless come to dominate the retail market is definitive proof that they are able to compete effectively. For example, as the D.C. Circuit recently found in analogous circumstances, the fact that IXCs may

¹⁰³ See, e.g., K. Fitchard, *Rollout Kicks Off 3G's Amazing Race*, Telephony (Oct. 6, 2003) (Sprint ran a trial of EvDO in Boise, Idaho); S. Marek, *U.S. Spotlight Shines on EV-DO*, Wireless Week (Apr. 15, 2003), <http://www.wirelessweek.com/article/CA292170> (Sprint PCS affiliate Ubiquitel has been testing its own EvDO network).

¹⁰⁴ C. Larsen, et al., Prudential Equity Group, LLC, *Wireless Services: CTIA Trade Show Take-Aways* at 3 (Mar. 24, 2004).

¹⁰⁵ *Verizon November 13, 2003 Ex Parte* at 17.

¹⁰⁶ See, e.g., *Triennial Review Order* ¶ 302 (“Enterprise market customers . . . prefer a single provider capable of meeting all their needs at each of their business locations which may be in multiple locations in different parts of the city, state or country.”).

¹⁰⁷ M. Bowen, et al., Schwab Soundview Capital Markets, *AT&T Corp.* at 2 (Jan. 21, 2004).

¹⁰⁸ See *id.* at 3.

¹⁰⁹ IDC estimated total frame-relay revenues of \$7.44 billion for 2003, while total ATM revenues were estimated at \$1.98 billion. See R. Kaplan, IDC, *U.S. Frame Relay Services Forecast, 2002-2007* at Table 2 (Mar. 2003); R. Kaplan, IDC, *U.S. ATM Services Forecast, 2002-2007* at Table 2 (Mar. 2003).

¹¹⁰ David Dorman, Chairman and CEO, AT&T, *Presentation for Credit Suisse First Boston Media and Telecom Week* at 6 (Dec. 11, 2003) (“*Dorman/AT&T Presentation*”).

be using special access services as an input in the broadband data services they provide to end-user customers has not changed the fact that the retail market for broadband services provided to large businesses is “rapidly expanding and prosperous,” with competition “not only . . . surviv[ing] but . . . flourish[ing].”¹¹¹ In any event, these parties greatly exaggerate the limitations on the availability of competitive facilities. Time Warner Telecom has recently stated that “[w]hile [RBOCs] have lot of fiber deployed, I don’t know that they have more buildings connected than we do in all cases. In certain markets they may; in others they may not.”¹¹² In December 2003, AT&T noted that its network now “touches virtually all Fortune 1,000 companies.”¹¹³

Moreover, the availability and use of alternative last-mile broadband facilities for large businesses is rapidly increasing, just as it is for other segments of the broadband market. A recent study by In-Stat/MDR found that 41 percent of “enterprises” (businesses with 5,000 or more employees) were using cable modem service, 40 percent were using fixed wireless, and 21 percent were using satellite, in place of or in addition to other alternatives such as high-speed ILEC lines.¹¹⁴ With respect to the “middle market” (businesses with between 500 and 5,000 employees), 32 percent were using cable modem, 29 percent fixed wireless, and 9 percent were using satellite.¹¹⁵ In addition, the study finds that 40 percent of enterprise businesses and 38 percent of middle-market businesses plan to use cable modem in the next 12 months, and that 54 percent and 44 percent, respectively, plan to use fixed wireless within that time.¹¹⁶

These findings are consistent with the fact that both cable operators have increasingly been going after large businesses. Cox Business Services “provides a range of advanced communications services, including high-speed Internet access . . . for companies of all sizes.”¹¹⁷ Cox’s Business Services division estimated that it has already garnered 10-13 percent of the market (based on revenue) in areas where its services are currently available.¹¹⁸ Comcast boasts that it provides “best in class fiber-based Metropolitan Area Network (MAN) services by utilizing thousands of miles of existing fiber infrastructure.”¹¹⁹ As the Yankee Group notes, “[t]he focus of Comcast Business Communications . . . is fiber-to-the-building and passive optical networking (PON).”¹²⁰ Time Warner Cable is “delivering cost effective, high capacity

¹¹¹ *United States Telecom Assn. v. FCC*, No. 00-1012, Slip. Op. at 30-31 (D.C. Cir. Mar. 2, 2004).

¹¹² E. Gubbins, *A Conversation with Time Warner Telecom’s Mike Rouleau*, TelephonyOnline (Oct. 29, 2003), http://telephonyonline.com/ar/telecom_conversation_time_warner/index.htm (quoting Mike Rouleau, Time Warner Telecom senior vice president of business development).

¹¹³ *Dorman/AT&T Presentation* at 6.

¹¹⁴ *In-Stat/MDR December 2003 Study* at 19, Table 9.

¹¹⁵ *Id.*

¹¹⁶ *Id.* at 19, Table 10.

¹¹⁷ Cox Communications, Form 10-K (SEC filed Mar. 31, 2003).

¹¹⁸ Cox Communications, presentation before the UBS Media Week Conference (Dec. 2003), <http://phx.corporate-ir.net/phoenix.zhtml?c=76341&p=irol-presentations>.

¹¹⁹ Comcast Commercial Services, *Data Services*, http://www.comcast-ccs.com/frames.asp?section=products_and_services&page=data_description.

access solutions to several Fortune 500 customers.”¹²¹ Charter is moving “‘up-market’ to compete in Enterprise RFP environment;”¹²² it reports that 9 percent of its business subscribers are medium or large businesses.¹²³

¹²⁰ M. Lauricella, *et al.*, The Yankee Group, *Cable MSOs: Ready to Take Off in the Small and Medium Business Market* at 7 (Mar. 2002).

¹²¹ Road Runner Business Class, *High Speed Internet*, <http://www.twcbroadband.com/products/hsd.php> (Jan. 13, 2004).

¹²² T. Cullen, senior vice president, Advanced Services, Charter Communications, presentation before the Smith Barney Citigroup Entertainment, Media & Telecommunications Conference, at 23 (Jan. 7, 2004).

¹²³ Charter Communications, presentation before the UBS Media Week Conference, at 19 (Dec. 11, 2003) (reporting that 91% of business customers are small businesses).

**APPENDIX B
VOICE-OVER-IP PRICE COMPARISONS**

Table 1. New York-Northern New Jersey-Long Island, NY-NJ-PA MSA												
	Circuit-Switched				VoIP						Wireless*	
	Verizon Freedom	AT&T One Rate USA	MCI Neighborhood Complete	Z-Tel Z-Line HOME Unlimited	Cablevision Optimum Voice	Vonage Premium Unlimited	AT&T Call Vantage	voiceglo Unlimited	VoicePulse America Unlimited	Packet8 Freedom Unlimited	Cingular Nation GSM 600	T-Mobile Get More (National)
Price per Month	\$60	\$55	\$50	\$50	\$35	\$30	\$40	\$30	\$35	\$20	\$50	\$40
Taxes, Fees & Surcharges**	\$15+	\$15+	\$14+	\$14+	none	\$2-\$4	\$4-\$5	none	\$1-\$2	\$1	\$8+	\$7+
Local	Unlimited				Unlimited						600 A, unltd. N/W, unltd. M-M mins; rollover	600 A, unltd. N/W minutes
Local Toll	Unlimited				Unlimited							
Long Distance	Unlimited				Unlimited							
International	Unlimited to Canada				Unlimited to Canada			Unlimited to Canada				
Call Waiting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Caller ID	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Call Forwarding	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Voicemail	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓
<p>* Abbreviations used for wireless plans: A – Anytime; N/W – Night/Weekend; M-M – Mobile-to-Mobile; unltd. – unlimited; rollover – unused minutes are carried over to the next billing cycle. ** Taxes, fees, and surcharges are approximate.</p>												

Table 2. Los Angeles-Long Beach-Santa Ana, CA MSA

	Circuit-Switched				VoIP					Wireless*	
	SBC All Distance Connections	Comcast Connections Any Distance	MCI Neighbor- hood Complete	Z-Tel Z-Line HOME Unlimited	Vonage Premium Unlimited	AT&T Call Vantage	voiceglo Unlimited	VoicePulse America Unlimited	Packet8 Freedom Unlimited	Cingular Nation GSM 600	T-Mobile Get More (National)
Price per Month	\$49	\$49	\$40	\$50	\$30	\$40	\$30	\$35	\$20	\$50	\$40
Taxes, Fees & Surcharges**	\$12+	\$12+	\$11+	\$12+	\$2	\$5	none	\$1	\$1	\$8+	\$7+
Local	Unlimited				Unlimited					600 A, unltd. N/W, unltd. M-M mins; rollover	600 A, unltd. N/W minutes
Local Toll	Unlimited				Unlimited						
Long Distance	Unlimited				Unlimited						
International					Unlimited to Canada		Unlimited to Canada				
Call Waiting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Caller ID	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Call Forwarding				✓	✓	✓	✓	✓	✓	✓	✓
Voicemail	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
* Abbreviations used for wireless plans: A – Anytime; N/W – Night/Weekend; M-M – Mobile-to-Mobile; unltd. – unlimited; rollover – unused minutes are carried over to the next billing cycle. ** Taxes, fees, and surcharges are approximate.											

Table 3. Chicago-Naperville-Joliet, IL-IN-WI MSA

	Circuit-Switched					VoIP				Wireless*	
	SBC All Distance Connections	Comcast Connections Any Distance	AT&T One Rate USA	MCI Neighbor- hood Complete	Z-Tel Z-Line HOME Unlimited	Vonage Premium Unlimited	voiceglo Unlimited	VoicePulse America Unlimited	Packet8 Freedom Unlimited	Cingular Nation GSM 600	T-Mobile Get More (National)
Price per Month	\$49	\$49	\$49	\$50	\$50	\$30	\$30	\$35	\$20	\$50	\$40
Taxes, Fees & Surcharges**	\$12+	\$12+	\$12+	\$12+	\$12+	\$2	none	\$1	\$1	\$8+	\$7+
Local	Unlimited					Unlimited				600 A, unltd. N/W, unltd. M-M mins; rollover	600 A, unltd. N/W minutes
Local Toll	Unlimited					Unlimited					
Long Distance	Unlimited					Unlimited					
International						Unlimited to Canada					
Call Waiting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Caller ID	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Call Forwarding			✓		✓	✓	✓	✓	✓	✓	✓
Voicemail	✓			✓	✓	✓	✓	✓	✓	✓	✓
<p>* Abbreviations used for wireless plans: A – Anytime; N/W – Night/Weekend; M-M – Mobile-to-Mobile; unltd. – unlimited; rollover – unused minutes are carried over to the next billing cycle. ** Taxes, fees, and surcharges are approximate.</p>											

Table 4. Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA

	Circuit-Switched					VoIP				Wireless*	
	Verizon Freedom	RCN Megaphone	AT&T One Rate USA	MCI Neighborhood Complete	Z-Tel Z-Line HOME Unlimited	Vonage Premium Unlimited	voiceglo Unlimited	VoicePulse America Unlimited	Packet8 Freedom Unlimited	Cingular Nation GSM 600	T-Mobile Get More (National)
Price per Month	\$55	\$50	\$50	\$50	\$50	\$30	\$30	\$35	\$20	\$50	\$40
Taxes, Fees & Surcharges**	\$13+	\$13+	\$13+	\$13+	\$13+	\$2	none	\$1-\$2	\$1	\$8+	\$7+
Local	Unlimited					Unlimited				600 A, unltd. N/W, unltd. M-M mins; rollover	600 A, unltd. N/W minutes
Local Toll	Unlimited					Unlimited					
Long Distance	Unlimited					Unlimited					
International	Unlimited to Canada					Unlimited to Canada					
Call Waiting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Caller ID	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Call Forwarding	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Voicemail	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
* Abbreviations used for wireless plans: A – Anytime; N/W – Night/Weekend; M-M – Mobile-to-Mobile; unltd. – unlimited; rollover – unused minutes are carried over to the next billing cycle. ** Taxes, fees, and surcharges are approximate.											

Table 5. Dallas-Fort Worth-Arlington, TX MSA

	Circuit-Switched					VoIP					Wireless*	
	SBC All Distance Connections	Comcast Connections Any Distance	AT&T One Rate USA	MCI Neighborhood Complete	Z-Tel Z-Line HOME Unlimited	Vonage Premium Unlimited	AT&T Call Vantage	voiceglo Unlimited	VoicePulse America Unlimited	Packet8 Freedom Unlimited	Cingular Nation GSM 600	T-Mobile Get More (National)
Price per Month	\$49	\$50	\$49	\$50	\$50	\$30	\$40	\$30	\$35	\$20	\$50	\$40
Taxes, Fees & Surcharges**	\$12+	\$13+	\$12+	\$13+	\$13+	\$2	\$5	none	\$1	\$1	\$8+	\$7+
Local	Unlimited					Unlimited					600 A, unltd. N/W, unltd. M-M mins; rollover	600 A, unltd. N/W minutes
Local Toll	Unlimited					Unlimited						
Long Distance	Unlimited					Unlimited						
International						Unlimited to Canada		Unlimited to Canada				
Call Waiting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Caller ID	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Call Forwarding			✓		✓	✓	✓	✓	✓	✓	✓	✓
Voicemail	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓

* Abbreviations used for wireless plans: A – Anytime; N/W – Night/Weekend; M-M – Mobile-to-Mobile; unltd. – unlimited; rollover – unused minutes are carried over to the next billing cycle.
 ** Taxes, fees, and surcharges are approximate.

Table 6. Miami-Fort Lauderdale-Miami Beach, FL MSA

	Circuit-Switched				VoIP				Wireless*	
	BellSouth Value Answers Premier	AT&T One Rate USA	MCI Neighborhood Complete	Z-Tel Z-Line HOME Unlimited	Vonage Premium Unlimited	voiceglo Unlimited	VoicePulse America Unlimited	Packet8 Freedom Unlimited	Cingular Nation GSM 600	T-Mobile Get More (National)
Price per Month	\$55	\$55	\$50	\$50	\$30	\$30	\$35	\$20	\$50	\$40
Taxes, Fees & Surcharges**	\$14+	\$14+	\$13+	\$13+	\$2	none	\$1	\$1	\$8+	\$7+
Local	Unlimited				Unlimited				600 A, unltd. N/W, unltd. M-M mins; rollover	600 A, unltd. N/W minutes
Local Toll	Unlimited				Unlimited					
Long Distance	Unlimited				Unlimited					
International					Unlimited to Canada					
Call Waiting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Caller ID	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Call Forwarding	✓	✓		✓	✓	✓	✓	✓	✓	✓
Voicemail			✓	✓	✓	✓	✓	✓	✓	✓
<p>* Abbreviations used for wireless plans: A – Anytime; N/W – Night/Weekend; M-M – Mobile-to-Mobile; unltd. – unlimited; rollover – unused minutes are carried over to the next billing cycle.</p> <p>** Taxes, fees, and surcharges are approximate.</p>										

Table 7. Washington-Arlington-Alexandria, DC-VA-MD-WV MSA

	Circuit-Switched				VoIP				Wireless*	
	Verizon Freedom	Starpower Ultra Unlimited Long Distance	MCI Neighborhood Complete	Z-Tel Z-Line HOME Unlimited	Vonage Premium Unlimited	voiceglo Unlimited	VoicePulse America Unlimited	Packet8 Freedom Unlimited	Cingular Nation GSM 600	T-Mobile Get More (National)
Price per Month	\$50	\$52	\$50	\$50	\$30	\$30	\$35	\$20	\$50	\$40
Taxes, Fees & Surcharges**	\$10+	\$10+	\$10+	\$10+	\$2	none	\$1	\$1	\$8+	\$7+
Local	Unlimited				Unlimited				600 A, unltd. N/W, unltd. M-M mins; rollover	600 A, unltd. N/W minutes
Local Toll	Unlimited				Unlimited					
Long Distance	Unlimited				Unlimited					
International	Unlimited to Canada				Unlimited to Canada					
Call Waiting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Caller ID	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Call Forwarding	✓	✓		✓	✓	✓	✓	✓	✓	✓
Voicemail	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<p>* Abbreviations used for wireless plans: A – Anytime; N/W – Night/Weekend; M-M – Mobile-to-Mobile; unltd. – unlimited; rollover – unused minutes are carried over to the next billing cycle.</p> <p>** Taxes, fees, and surcharges are approximate.</p>										

Table 8. Houston-Baytown-Sugar Land, TX MSA

	Circuit-Switched				VoIP					Wireless*	
	SBC All Distance Connections	AT&T One Rate USA	MCI Neighbor- hood Complete	Z-Tel Z-Line HOME Unlimited	Vonage Premium Unlimited	AT&T Call Vantage	voiceglo Unlimited	Packet8 Freedom Unlimited	BroadVoice Unlimited USA	Cingular Nation GSM 600	T-Mobile Get More (National)
Price per Month	\$49	\$49	\$50	\$50	\$30	\$40	\$30	\$20	\$20	\$50	\$40
Taxes, Fees & Surcharges**	\$12+	\$12+	\$13+	\$13+	\$2	\$5	none	\$1	\$2	\$8+	\$7+
Local	Unlimited				Unlimited					600 A, unltd. N/W, unltd. M-M mins; rollover	600 A, unltd. N/W minutes
Local Toll	Unlimited				Unlimited						
Long Distance	Unlimited				Unlimited						
International					Unlimited to Canada		Unlimited to Canada				
Call Waiting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Caller ID	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Call Forwarding		✓		✓	✓	✓	✓	✓	✓	✓	✓
Voicemail	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
<p>* Abbreviations used for wireless plans: A – Anytime; N/W – Night/Weekend; M-M – Mobile-to-Mobile; unltd. – unlimited; rollover – unused minutes are carried over to the next billing cycle. ** Taxes, fees, and surcharges are approximate.</p>											

Table 9. Atlanta-Sandy Springs-Marietta, GA MSA

	Circuit-Switched					VoIP				Wireless*	
	BellSouth Value Answers Premier	Comcast Connections Any Distance	AT&T One Rate USA	MCI Neighborhood Complete	Z-Tel Z-Line HOME Unlimited	Vonage Premium Unlimited	voiceglo Unlimited	VoicePulse America Unlimited	Packet8 Freedom Unlimited	Cingular Nation GSM 600	T-Mobile Get More (National)
Price per Month	\$55	\$50	\$50	\$50	\$50	\$30	\$30	\$35	\$20	\$50	\$40
Taxes, Fees & Surcharges**	\$14+	\$13+	\$13+	\$13+	\$13+	\$2	none	\$1	\$1	\$8+	\$7+
Local	Unlimited					Unlimited				600 A, unltd. N/W, unltd. M-M mins; rollover	600 A, unltd. N/W minutes
Local Toll	Unlimited					Unlimited					
Long Distance	Unlimited					Unlimited					
International						Unlimited to Canada					
Call Waiting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Caller ID	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Call Forwarding	✓		✓		✓	✓	✓	✓	✓	✓	✓
Voicemail				✓	✓	✓	✓	✓	✓	✓	✓
* Abbreviations used for wireless plans: A – Anytime; N/W – Night/Weekend; M-M – Mobile-to-Mobile; unltd. – unlimited; rollover – unused minutes are carried over to the next billing cycle. ** Taxes, fees, and surcharges are approximate.											

Table 10. Detroit-Warren-Livonia, MI MSA

	Circuit-Switched					VoIP				Wireless*	
	SBC All Distance Connections	Comcast Connections Any Distance	AT&T One Rate USA	MCI Neighbor- hood Complete	Z-Tel Z-Line HOME Unlimited	Vonage Premium Unlimited	voiceglo Unlimited	VoicePulse America Unlimited	Packet8 Freedom Unlimited	Cingular Nation GSM 600	T-Mobile Get More (National)
Price per Month	\$49	\$49	\$49	\$50	\$50	\$30	\$30	\$35	\$20	\$50	\$40
Taxes, Fees & Surcharges**	\$11+	\$11+	\$11+	\$11+	\$11+	\$2	none	\$1	\$1	\$8+	\$7+
Local	Unlimited					Unlimited				600 A, unltd. N/W, unltd. M-M mins; rollover	600 A, unltd. N/W minutes
Local Toll	Unlimited					Unlimited					
Long Distance	Unlimited					Unlimited					
International						Unlimited to Canada					
Call Waiting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Caller ID	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Call Forwarding			✓		✓	✓	✓	✓	✓	✓	✓
Voicemail	✓			✓	✓	✓	✓	✓	✓	✓	✓
<p>* Abbreviations used for wireless plans: A – Anytime; N/W – Night/Weekend; M-M – Mobile-to-Mobile; unltd. – unlimited; rollover – unused minutes are carried over to the next billing cycle. ** Taxes, fees, and surcharges are approximate.</p>											

**APPENDIX C
ADDITIONAL VOIP SERVICES**

Plan	Service Price	Local/Local Toll/ Long Distance	Required Equipment*
American Int'l Telephonics	prepaid minutes	4.9¢/min. to PSTN	free software
BuddyTalk	free	unlimited to BuddyTalk users; 4¢/min. (prepaid) to PSTN	free software
Crystal Voice LIVE	\$19.99/yr. (renew for \$14.95/yr.)	unlimited to LIVE users; 3.9¢/min. to PSTN	free software
Dialpad Monthly 300	\$7.50	300 min.	free software
Dialpad Monthly 500	\$9.99	500 min.	free software
Dialpad Monthly 1200	\$19.99	1200 min.	free software
Free IP Call	free	unlimited to Free IP users	SIP telephone or SIP software
Free World Dialup	free	unlimited to FWD & partner members	IP phone or free FWD software
iConnectHere Per Minute	none	2.4¢/min.+	free software
iConnectHere N. America 400	\$5.95	400 min.	free software
iConnectHere N. America 1000	\$10.95	1000 min.	free software
ICQPhone	free	unlimited to ICQPhone users; 2¢/min. (prepaid) to PSTN	free software
InPhonex Basic Membership	free	unlimited to InPhonex members	free software
InPhonex Premium Membership	\$19.99/yr.	300 min. to PSTN + choice of prepaid long-distance options: 125-1250 min. for \$4.95-\$39.95	free software
MeritCall FreedomFone	activation fee: \$19.99 (currently waived)	unlimited to MeritPhone users; 1.9¢/min. to PSTN	FreedomFone
Net2Phone VoiceLine Basic	\$8.99	unlimited inbound; 2.9¢/min. outbound	Innomedia MTA3328-2 Telephone Adapter
Net2Phone VoiceLine	\$9.99	unlimited to VoiceLine users; unlimited inbound/300 min. outbound to PSTN	Innomedia MTA3328-2 Telephone Adapter
	\$14.99	unlimited to VoiceLine users; unlimited inbound/500 min. outbound to PSTN	
Primus Talk	prepaid minutes	3.9¢/min.	free software
SIP Phone	free	unlimited to anyone with a SIPphone or SIPadapter	SIPphone or SIPadapter
SIP Phone Virtual Number	\$3.99/mo. (6 mo.) or \$2.99/mo. (1 yr.)	3¢/min.	SIPphone or SIPadapter
Skype	free	unlimited to Skype users	free software
SnapTel	prepaid minutes	2.9¢/min.	free software
TechTerra TerraCall	free	unlimited SIP-to-SIP; 1.49¢/min. (prepaid) to PSTN	free software
*In addition to PC sound card and headset or headset. Sources: See Appendix D.			

APPENDIX D

TABLE & FIGURE SOURCES

Table 1. Deployment and Availability of VoIP Services

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Appendix B. Voice-over-IP Price Comparisons

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