Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
IP-Enabled Services	)	WC Docket No. 04-36
	)	

NOTICE OF PROPOSED RULEMAKING

Adopted: February 12, 2004 **Released:** March 10, 2004

Comment date: [60 Days After Federal Register Publication of this Notice]
Reply Comment date: [90 Days After Federal Register Publication of this Notice]

By the Commission: Chairman Powell, Commissioners Abernathy and Martin issuing separate statements; Commissioner Copps concurring and issuing a statement; Commissioner Adelstein approving in part, concurring in part and issuing a separate statement.

TABLE OF CONTENTS

I. INTRODUCTION

1. In this Notice of Proposed Rulemaking (Notice), we examine issues relating to services and applications making use of Internet Protocol (IP), including but not limited to voice over IP (VoIP) services (collectively, "IP-enabled services").[1] We seek comment on the impact that IP-enabled services, many of which are accessed over the Internet, have had and will continue to have on the United States' communications landscape. As a truly global network providing instantaneous connectivity to individuals and services, the Internet has transcended historical jurisdictional boundaries to become one of the greatest drivers of consumer choice and benefit, technical innovation, and economic development in the United States in the last ten years. We acknowledge that it has done so in an environment that is free of many of the regulatory obligations applied to traditional telecommunications services and networks. Carriers have begun to realize efficiencies associated with utilization of IP in both the backbone and the "last mile" of their networks. 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. Increasingly, these customers will speak with each other using VoIP-based services instead of circuit-switched telephony and view content over streaming Internet media instead of broadcast or cable platforms. By doing so, they will change, fundamentally, their use of these applications and services – consumers will become increasingly empowered to customize the services they use, and will choose these services from an unprecedented range of service providers and platforms.

[1] Specifically, the scope of this proceeding – and the term "IP-enabled services," as it is used here – includes services and applications relying on the Internet Protocol family. IP-enabled "services" could include the digital communications capabilities of increasingly higher speeds, which use a number of transmission network technologies, and which generally have in common the use of the Internet Protocol. Some of these may be highly managed to support specific communications functions. IP-enabled "applications" could include capabilities based in higher-level software that can be invoked by the customer or on the customer's behalf to provide functions that make use of communications services. Because both of these uses of IP are contributing to important transformations in the communications environment, this Notice seeks commentary on both, and uses the term "IP-enabled services" to refer to "applications" as well as "services." Recognizing the broad scope entailed by this definition, we invite comment below on how we might more rigorously distinguish those specific classes of IP-enabled services, if any, on which we should focus our attention. We emphasize, however, that this Notice does *not* address standard-setting issues for the Internet Protocol language itself, which are more appropriately addressed in other fora, or other items outside this Commission's jurisdiction, such as Internet governance.

2. This Commission must necessarily examine what its role should be in this new environment of increased consumer choice and power, and ask whether it can best meet its role of safeguarding the public interest by continuing its established policy of minimal regulation of the Internet and the services provided over it.[2] To that end, we invite comment on IP-enabled services available today and those expected to become available in the future. We seek comment on how we might distinguish among such services, and on whether any regulatory treatment would be appropriate for any class of services.

3. In other proceedings, we have recognized the paramount importance of encouraging deployment of broadband[3] infrastructure to the American people.[4] As broadband facilities have proliferated, communications services and networks have increasingly taken advantage of the efficiencies associated with translating data into IP packets running over the same network infrastructures.[5] As discussed below, enterprises are already relying heavily on IP-based applications to facilitate both internal and external communications.[6] Moreover,

---

[2] We note that IP-enabled services, as we define this term, are typically provided over broadband facilities, but could ride on narrowband facilities. It appears that as IP-enabled services become more sophisticated and high-speed facilities proliferate, these services will predominantly be provided on broadband platforms, including wireline, cable, wireless, and satellite facilities, and perhaps new platforms not widely used at present. *See, e.g.*, *Inquiry Regarding Carrier Current Systems, Including Broadband over Power Line Systems*, ET Docket No. 03-104, Notice of Inquiry, 18 FCC Rcd 8498 (2003) (seeking comment on technical issues relating to provision of broadband over power line facilities).

[3] We use the term "broadband" to signify "advanced telecommunications capability and advanced services," which we have defined, for the purposes of our section 706 Reports, as those services having the capability to support both upstream and downstream speeds in excess of 200 Kbps in the last mile. *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*, Third Report, 17 FCC Rcd 2844, 2850-51, para. 9 (2002) (internal quotations omitted) (*Third Section 706 Report*); *accord 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*, Second Report, 15 FCC Rcd 20913, 20919-20, para. 10 (2000) (*Second Section 706 Report*). The Commission also has "denominate[d] as 'high-speed' those services with over 200 kbps capability in at least one direction." *Second Section 706 Report*, 15 FCC Rcd at 20920, para. 11; *accord Third Section 706 Report*, 17 FCC Rcd at 2850-51, para. 9.

[4] *See, e.g.*, *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, Universal Service Obligations of Broadband Providers*, CC Docket Nos. 02-33, 95-20, 98-10, Notice of Proposed Rulemaking, 17 FCC Rcd 3019, 3020-21, para. 1 (2002) (*Wireline Broadband NPRM*).

[5] *See infra* Part II.A.

[6] *See infra* Part II.A. For, example, more and more businesses are moving to VoIP solutions in lieu of PBXs and other traditional facilities to manage their communications. *See, e.g.*, Nortel Networks & Verizon Communications, *Verizon Selects Nortel Networks to Accelerate Building of Nation's Largest Converged, Packet-Switched Wireline Network Using Voice-Over-IP Technology*, Press Release at 3 (Jan. 7, 2004) (stating that Verizon and Nortel intend to market VoIP upgrades to Verizon's existing PBX customers and to migrate them away from existing legacy PBXs to Verizon's converged IP network).

providers offering VoIP services[7] are beginning to challenge traditional telecommunications carriers in residential markets – and even today use IP to transport residential interexchange calls, often unbeknownst to end users.[8] The increasing deployment of broadband facilities therefore has prompted the development of services and applications that provide broader functionality and greater consumer choice at prices competitive to those of analogous services provided over the public switched telephone network (PSTN). Many observers predict that, before long, providers will be able to integrate voice and real-time video to provide new capabilities and service offerings.[9] The development of such services is likely to prompt increased deployment of wireline, cable, wireless, and other broadband facilities[10] capable of bringing IP-enabled services to the public, which in turn, we expect, will prompt further development and deployment of such services. This process may challenge the central role that legacy technologies have played in American communications for over 100 years.[11]

4. But VoIP services are not necessarily mere substitutes for traditional telephony services, because the new networks based on the Internet Protocol are, both technically and administratively, different from the PSTN. Whereas the PSTN is designed to meet the analog communications requirements of two-way voice conversations, IP networks are designed to meet the short-burst digital data communications requirements of computing networks. Whereas the PSTN's design is logically and physically hierarchical, utilizing highly centralized signaling intelligence to connect parties to a communication, IP network design is "flat," distributing network intelligence and permitting highly dynamic and flexible routing that takes into account network delays, changes in loads, and changes in topology.[12] And whereas enhanced functionalities delivered via the PSTN typically must be created internally by the network

---

[7] While we adopt no formal definition of "VoIP," we use the term generally to include any IP-enabled services offering real-time, multidirectional voice functionality, including, but not limited to, services that mimic traditional telephony.

[8] *See infra* Part II.A.

[9] *See infra* Part II.A.

[10] *See, e.g.*, *supra* note 2.

[11] According to industry data compiled by the Commission, interstate access minutes have declined significantly in recent years; industry watchers expect VoIP to hasten the decline. *See Universal Service Monitoring Report*, CC Docket No. 98-202, Table 8.2 (Dec. 22, 2003) (interstate switched access minutes declined to 486.0 billion minutes in 2002 from 538.3 billion interstate minutes in 2001, and interstate switched minutes declined to 113.8 billion in the first quarter 2003 from 124.8 billion in the first quarter of 2002); *see also* Peter Grant & Almar Latour, *Circuit Breaker: Battered Telecoms Face New Challenge: Internet Calling – The "Pac-Man" of Protocols*, Wall St. J., Oct. 9, 2003, at A1 (stating that VoIP poses a "credible threat" to established telecommunications carriers) (Grant & Latour); Dan Richman, *Internet Phone Calls Entice Consumers, Industry,* Seattle Post Intelligencer (last modified Dec. 12, 2003) <http://msnbc.msn.com/id/3690595/> (given the low cost of VoIP, business of land-line carriers is threatened).

[12] Applications requiring segmented data to arrive in sequence and without error generally rely on a higher-level end-to-end protocol such as the Transmission Control Protocol (TCP).

operator and are often tied to a physical termination point, IP-enabled services can be created by users or third parties, providing innumerable opportunities for innovative offerings competing with one another over multiple platforms and accessible wherever the user might have access to the IP network.[13] The rise of IP thus challenges the key assumptions on which communications networks, and regulation of those networks, are predicated: Packets routed across a global network with multiple access points defy jurisdictional boundaries. Networks capable of facilitating any sort of application that programmers can devise have empowered consumers to choose services they desire rather than merely accepting a provider's one-size-fits-all offering. In this Notice, we seek comment on whether the proliferation of services and applications utilizing a common protocol may permit competitive developments in the marketplace to play the key role once played by regulation.

5. For all these reasons, the changes wrought by the rise of IP-enabled communications promise to be revolutionary. These developments are expected to reduce the cost of communication and to spur innovation and individualization, giving rise to a communications environment in which offerings are designed not to fit within the limitations of a legacy network but rather to provide each end user a highly customized, low-cost suite of services delivered in the manner of his or her choosing. IP-enabled services generally – and VoIP in particular – will encourage consumers to demand more broadband connections, which will foster the development of more IP-enabled services. IP-enabled services, moreover, have increased economic productivity and growth, and bolstered network redundancy and resiliency. Our aim in this proceeding is to facilitate this transition, relying wherever possible on competition and applying discrete regulatory requirements only where such requirements are necessary to fulfill important policy objectives. We expressly recognize the possibility that we ultimately will need to differentiate among various IP-enabled services. For example, much of the telecommunications regulation implemented by the Commission had its roots in seeking to control monopoly ownership of the PSTN. To the extent the market for IP-enabled services is not characterized by such monopoly conditions, we seek comment on whether there is a compelling rationale for applying traditional economic regulation to providers of IP-enabled services. As discussed below,[14] other aspects of the existing regulatory framework – including those provisions designed to ensure disability access, consumer protection, emergency 911 service, law enforcement access for authorized wiretapping purposes, consumer privacy, and others – should continue to have relevance as communications migrate to IP-enabled services. Because we do not prejudge these issues, however, this Notice asks broad questions covering a wide range of services and applications, and a wide assortment of regulatory requirements and benefits, to ensure the development of a full and complete record upon which we can arrive at sound legal and policy conclusions regarding whether and how to differentiate between IP-

[13] Indeed, while a century of PSTN development has given rise to relatively few opportunities for user customization, a mere decade of widespread commercial use has produced a dizzying array of IP-enabled services, ranging from presence management to multimedia conferencing to unified messaging, as discussed in greater detail below.

[14] *See infra* Part V.B; Part VI.A.

enabled services and traditional voice legacy services, and how to differentiate among IP-enabled services themselves. As discussed above, fencing off IP platforms from economic regulation traditionally applied to legacy telecommunications services would not put them beyond the reach of regulations designed to promote public safety and consumer protection (such as E911) or other important public policy concerns. Instead, this proceeding is designed to seek public comment on future decisions that would start from the premise that IP-enabled services are minimally regulated.

6. The remainder of this Notice is organized as follows. In Part II, we describe the evolution of the IP-enabled services falling within the ambit of this proceeding,[15] and set forth the legal framework against which we consider the appropriate regulatory treatment, if any, for these services.[16] In Part III, we seek comment on whether it would be appropriate to establish categories of IP-enabled services, based on important distinguishing characteristics, and ask commenters to propose specific grounds on which such categorization, if appropriate, should be pursued.[17] Part IV examines the jurisdictional issues associated with VoIP and other IP-enabled services and seeks comment on whether to extend the application of the Commission's ruling that a certain type of VoIP offering is an unregulated information service subject to federal jurisdiction.[18] Part V seeks comment on the appropriate legal and regulatory framework for categories of IP-enabled services identified by commenters.[19] Specifically, we seek comment on the appropriate legal classification of each type of IP-enabled service,[20] and then on the necessity of applying specific regulatory requirements or benefits to those specific categories.[21] Part VI of this Notice addresses the applicability of several other regulatory requirements and the implications that our decisions here might have for rural carriers as well as for international and numbering issues.[22]

II. BACKGROUND

7. Our consideration of the critical legal and regulatory questions posed in this Notice is necessarily informed by the specific technological evolution of the services at issue and

[15] *See infra* Part II.A.

[16] *See infra* Part II.B.

[17] *See infra* Part III.

[18] *See infra* Part IV; *Petition for Declaratory Ruling that pulver.com's Free World Dialup is Neither Telecommunications Nor a Telecommunications Service*, WC Docket No. 03-45, Memorandum Opinion and Order, FCC 04-27 (rel. Feb. 19, 2004) (*Pulver Declaratory Ruling*).

[19] *See infra* Part V.

[20] *See infra* Part V.A.

[21] *See infra* Part V.B.

[22] *See infra* Part VI.

the specific legal framework under which we exercise our jurisdiction over interstate and international communications. In this section, we first briefly describe the history of IP-enabled services – a history characterized by explosive growth and, recently, the advent of offerings that promise to transform the communications environment – and then discuss the legal context in which we consider the questions posed by those offerings.

A. Technological and Market Evolution of IP-Enabled Services

8. The rise of the Internet has fundamentally changed the ways in which we communicate by increasing the speed of communication, the range of communicating devices, and the platforms over which they can send and receive. This growth has been possible because the Internet employs an open network architecture using a common protocol – the Internet Protocol, or IP – to transmit data across the network in a manner fundamentally different than the way in which signals transit a circuit-switched service.[23] Whereas circuit-switched networks generally reserve dedicated resources along a path through the network, IP networks route traffic without requiring the establishment of an end-to-end path. A telephone call placed over a circuit-switched network typically requires resources to be reserved along the path between both parties for the entire duration of the call, even if the amount of information being transferred does not require the full bandwidth of the facilities.[24] In contrast, in Internet Protocol networking, data is segmented into packets which are individually addressed and then transmitted over a series of physical networks which may be comprised of copper, fiber, coaxial cable, or wireless facilities.[25] When packets are transmitted via IP between two points, the

[23] In essence, the Internet is a global, packet-switched network of networks that are interconnected through the use of the common network protocol – IP. The Supreme Court has described the Internet as "an international network of interconnected computers." *Reno v. ACLU*, 521 U.S. 844, 849-50 (1997). No single entity controls the Internet, for it is a "worldwide mesh or matrix of hundreds of thousands of networks, owned and operated by hundreds of thousands of people." John S. Quarterman & Peter H. Salus, *How the Internet Works* (visited Dec. 17, 2003) <http://www.mids.org/works.html>.

[24] *See* Presentation by Christopher Rice, SBC Senior Vice-President, to FCC Staff, *VoIP Telephony Discussion* at 4 (Nov. 19, 2003) (*SBC Nov. 19 Presentation*) ("Trunk circuit held up between Phone A and Phone B for length of call"). This presentation, and all other cited presentations to Commission staff, have been filed in this docket (WC Docket No. 04-36) for public inspection.

[25] *See Living Internet: Routing* (visited Dec. 17, 2003) <http://livinginternet.com/i/iw_route.htm> (IP is used to transfer packets between networks); *Living Internet: How Packets Work* (visited Dec. 17, 2003) <http://livinginternet.com/i/iw_packet_packet.htm> (*How Packets Work*) (explaining how IP creates data packets and addresses them). The routers, which are computers connected to the IP network, examine the address on each IP packet, and, using a routing configuration table, decide to which other router in the network the IP packet should be sent. Each router in the network constantly communicates with the other routers, permitting each router to know whether the other router is active and the amount of traffic the other router is carrying. *See* Curt Franklin, *How Routers Work* (visited Dec. 17, 2003) <http://computer.howstuffworks.com/router6.htm> (*How Routers Work*). This information permits the routers to decide which route to use to send an IP packet toward its ultimate destination. *See Living Internet: How Switching Works* (visited Dec. 17, 2003) <http://livinginternet.com/i/iw_packet_switch.htm>. When the packet reaches this final destination it is unwrapped and the data inside is used for an application.

network does not establish a permanent or exclusive path between the points.[26] Instead, routers read packet addresses individually, and decide – sometimes on a packet-by-packet basis – which route to use for each packet.[27] Thus, the routes that packets will take to the same destination may vary, depending on the best routing information available to the routers.[28] Indeed, packets traveling in the opposite direction on the return communications between the same sending and receiving pair may follow an entirely different path. Moreover, these packets may carry any type of information for applications offering widely disparate functions, including those facilitating voice communications.[29]

9. The growth of the Internet has been accompanied by an explosion in consumer access to a growing universe of websites, all relying on IP. Many websites have evolved into content-rich information portals configured to serve the broad commercial, educational, political and entertainment interests of Internet users. In its initial stages, the Internet was primarily utilized for e-mail, file transfer, and – more recently – access to the world wide web. Increasingly, the Internet is being utilized for more sophisticated uses, such as peer-to-peer file sharing,[30] instant messaging, streaming media, online gaming, and virtual private networks (VPNs).[31] In turn, as applications proliferate and demand for Internet access services grows, service providers continue to augment network capacity to offer faster Internet access services.[32]

---

[26] *See Living Internet: Packet Switching History* (visited on Dec. 17, 2003) <http://livinginternet.com/i/iw_packet_inv.htm> (IP communications do not require an "always-on, continuous connection").

[27] *See How Routers Work*.

[28] *See id.*; *Living Internet: Interior Gateway Protocols* (visited Dec. 17, 2003) <http://livinginternet.com/i/iw_route_igp.htm> (describing the algorithms that routers use in deciding where to forward a packet).

[29] *See How Packets Work*.

[30] In the "peer-to-peer" (P2P) model, each party to a communication has the same capabilities and either party can initiate a communication session. Applications residing on the user's PC (or other hardware) permit the user to connect directly to another user's hardware without the assistance of an Internet Service Provider. Now that some in industry believe that most of the voice quality issues have been addressed, P2P voice service offerings are on the rise. *See* Victor Schnee, *Free Voice? Skype's Peer-To-Peer Is To Be Watched!*, Probe Financial Services (Oct. 27, 2003); Skype Limited, *What is Skype?* (visited Jan. 14, 2004) <http://www.skype.com/skype.html>.

[31] *See infra* Part II.A.2.

[32] Dial-up, or narrowband, Internet access utilizes the same PSTN infrastructure that telephone subscribers use to place traditional circuit-switched voice calls. As mentioned above, *see supra* note 3, the Commission has defined "high-speed" to describe transmission capacity capable of achieving over 200 kbps in at least one direction, and "advanced services" as having over 200 kbps capability in both directions. The Commission has more generally defined "high-speed" Internet as a service that "enables consumers to communicate over the Internet at speeds that are many times faster than the speeds offered through dial-up telephone connections" and that enables subscribers to "send and view content with little or no transmission delay, utilize sophisticated 'real-time' applications, and take advantage of other high-bandwidth services." *See 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* (continued….)

These broadband services have been deployed across multiple platforms, including those of local exchange carriers (LECs), cable operators, direct broadcast satellite (DBS), video programming providers and, increasingly, wireless (including WiFi) providers and electric companies using power lines.[33] In the following sections, we briefly describe a cross-section of the numerous offerings – including not only various sorts of IP telephony, but also new and unique forms of IP-based communication – made possible by these developments.

1. Internet Voice

10. Although several providers carry voice calls over their backbone IP networks, until recently, use of the Internet for the purpose of transmitting voice communications has been limited.[34] Early ventures in peer-to-peer IP telephony were largely unsuccessful in part due to the nature of early IP networks, which offered limited reliability and voice quality. Today, however, as a result of improvements in technology, IP networks are increasingly being used to carry voice communications. For example, private IP networks are used to provide an array of communications services to enterprise customers.[35] Residential users can access VoIP services

(Continued from previous page)
Inc., Transferee, CS Docket No. 00-30, Memorandum Opinion and Order, 16 FCC Rcd 6547, 6572, para. 63 (2001) (*FCC AOL Time Warner Merger Order*); *see also id.* at 6572, 6574-77, paras. 64, 69-73. Researchers at Telcordia predict that, in one decade, residential subscribers may possibly have Internet access speeds as high as one gigabit-per-second, and commercial systems may feasibly achieve approximately 20 terabits-per-second on a single optical fiber. *See* Presentation by Matthew S. Goodman, Ph.D., Chief Scientist and Telcordia Fellow, and Robert J. Runser, Ph.D., Senior Research Scientist, Telcordia Technologies, to FCC Staff, *Broadband Networking: What is Broadband?* 5 (Nov. 5, 2003). Providers are also increasing the speeds at which users can access the Internet over narrowband facilities. *See, e.g.*, *ISPs Use Retail Chains To Drive Subscription Growth In 2004*, Electronic Information Report (Jan. 12, 2004) (describing "EarthLink Accelerator," which "enables dial-up subscribers to access the Web at speed up to five times faster than standard 56K connections").

[33] CMRS providers are also offering broadband access. *See, e.g.,* Verizon Wireless, *Verizon Wireless Announces Roll Out of National 3G Network*, Press Release (Jan. 8, 2004) (Verizon Jan. 8, 2004 Press Release) (describing service providing speeds of 300 to 500 kbps); Monet Mobile Networks, *monet broadband*, at 3 (visited Jan. 14, 2004) <http://www.monetmobile.com/Assets/Audiovoxuser.pdf> (describing wireless broadband service introduced in the fall of 2002, offering average speeds of 700 kbps).

[34] The increase in the number of voice calls transmitted over at least a portion of an IP network over the past few years has been dramatic. In 2002, international VoIP traffic increased by 80% to 18.7 billion minutes, and comprised approximately 10.8% of all international call traffic. *See Telegeography 2004*, Primetrica, Inc. 12, 26 (Dec. 2004) (*Telegeography 2004*) (these numbers include all cross-border calls carried on an IP network and terminated on a PSTN; PC-to-PC communications and PVN traffic were excluded from Telegeography's survey). Another source estimates that, in 2002, the total world retail (residential and enterprise) IP voice traffic volume was approximately 47.5 billion minutes, while approximately 8 trillion minutes were carried using the PSTN. *See VoIP Services Assessment: Communications Service Strategies & Opportunities*, Stratecast Partners 19 (Feb. 2003) (*Stratecast Report*).

[35] Enterprises may utilize intra-office or interoffice private IP networks that handle voice calls and data transmission. Some of these IP networks are Virtual Private Networks (VPNs) that traverse the open Internet. *See* presentation by Christopher Rice, SBC Senior Vice-President, to FCC Staff, *VoIP Telephony Discussion* (Nov. 19, 2003) (*SBC Nov. 19 Presentation*).

using phones, laptops, and personal digital assistants. Even many gaming systems now feature VoIP functionality.[36] Also, wireless communications standards have evolved to include IP as a key component.[37] Many manufacturers are concentrating most, if not all, new development and marketing on IP-capable alternatives while merely providing maintenance support for legacy circuit-switched equipment currently in place.[38] Similarly, a recent flood of press announcements reflects that a number of service providers, from residential telephony companies

[36] *See infra* para. 19.

[37] For example, Code Division Multiple Access 2000 (cdma2000), one of the main third generation (3G) systems, uses enhanced Mobile IP in its core network architecture. *See* A. Jamalipour & P. Lorenz, "Merging IP and Wireless Networks," *IEEE Wireless Communications*, October 2003, Vol. 10 No. 5, at 6. The high-speed version of this standard, cdma2000 1xEV-DV (evolution – data, voice) supports an all IP-integrated voice, data, and video communications capability. *See* Y. Yoon et al., "Tutorial on CDMA 2000 1xEV-DV," IEEE Wireless Communications and Networking Conference 2003 *Ericsson Wireless Communications, USA*, March 17, 2003, at 9. Currently in the U.S., both Sprint PCS and Verizon Wireless support the 2.5G CDMA standard referred to as cdma2000 1X, which supports both circuit-switched voice and packet-switched data using Mobile IP. A 3G CDMA data-optimized standard is the cdma2000 1x EV-DO (evolution – data optimized) standard. *See CDMA2000 1x EV-DO is fast enough to be 3G* (visited Feb. 7, 2004) <http://www.3g.co.uk/PR/April2002/3273.htm>. To allow roaming users access to integrated data, voice, and multimedia services, standards bodies, such as the Internet Engineering Task Force (IETF) and Third-Generation Partnership Project (3GPP), are working on the specifications of an all IP wireless network. *See* N. Banerjee et al., The University of Texas at Arlington, "Mobility Support in Wireless Internet," *IEEE Wireless Communications*, October 2003, Vol. 10 No. 5, at 54. Another European 3G wireless network approved standard is the Universal Mobile Telecommunications System (UMTS). *See* UMTS Forum, *Network Evolution: Radio Access & Core Network Evolution GSM* (visited Feb. 7, 2004) <http://www.umts-forum.org/servlet/dycon/ztumts/umts/Live/en/umts/3G_Network_gsm>. UMTS' core network is comprised of an IP Multimedia Subsystem (IMS), which supports VoIP in addition to other multimedia services. UMTS also supports circuit-switched voice communications that are interconnected with the legacy PSTN. UMTS is an evolution of 2.5G GSM networks, including both the circuit-switched voice system and general packet radio service, GSM/GPRS, supporting IP services. *See* A. Jamalipour, "Tutorial on Wireless Mobile Internet – Architectures, Protocols and Services," IEEE Wireless Communications and Networking Conference 2003, *Ericsson Wireless Communications, USA*, March 16, 2003, at 50, 67; *see also* A. Jamalipour & P. Lorenz, "Merging IP and Wireless Networks," *IEEE Wireless Communications*, October 2003, Vol. 10 No. 5, at 6.

[38] *See* Nortel Networks, *Voice over IP* (visited Feb. 12, 2004) <http://www.nortelnetworks.com/corporate/technology/voip/index.html> ("Service providers and enterprises agree that the network of the future must offer combined voice and data communications over a single integrated platform built on packet technology."); Cisco Systems, *Cisco IP Communications Solutions* (visited Feb. 12, 2004) ("Cisco IP telephony solutions provide a flexible foundation for powerful new applications that extend the limits of traditional telephony.") <http://www.cisco.com/en/US/netsol/ns340/ns394/ns165/ns268/net_value_proposition09186a00800d756c.html>. Nortel is deploying VoIP-capable equipment that wireline carriers can use with their existing circuit-switched networks. *See Netphones Start Ringing Up Customers*, BusinessWeek online (Dec. 29, 2003) <http://www.businessweek.com/magazine/content/03_52/b3864039.htm> (estimating that spending on VoIP telephony equipment increased by 10% in 2003 from 2002). By some estimates, worldwide spending by businesses on IP telephony systems in 2003 was nearly double that of the previous year. *See* Grant and Latour (citing a research firm that estimates that spending on IP telephony systems would exceed $1 billion in 2003, constituting approximately "20% of world-wide business spending on phone systems").

to cable providers, have begun to use or will soon use IP to provide voice services to residential customers.[39]

11. These recent developments, however, must be understood within the context of the development of the technology in recent years, and the myriad services in which it is now used. IP telephony has been offered in various forms since at least 1995.[40] Early experience with the technology, however, appears to have deterred investors and consumers from adopting it because, analysts argue, its reliability and voice quality were below standards that most consumers would tolerate.[41] According to many industry watchers, technology has now overcome prior quality and reliability concerns.[42] These improvements, the creation of new IP

[39] *See, e.g.*, Ben Charny, *Cox Communications Dives into VoIP*, CNET News.com (Dec. 15, 2003) <http://news.com.com/2100-7352-5124440.html> (describing Cox's offering of VoIP service to cable customers in Roanoke, Virginia); Ben Charny, *Qwest Taps into Net Telephony*, CNET News.com (Dec. 10, 2003) <http://news.com.com/2100-7352-5119020.html> (describing Qwest VoIP service offered to customers using its broadband facilities); Ben Charny & Jim Hu, *Time Warner Cable Reaches VoIP Deals*, CNET News.com (Dec. 8, 2003) <http://news.com.com/2100-7352-5116936.html> (describing VoIP services to be offered using Time Warner's cable facilities); Ben Charny, *Verizon Details Internet Phone Plans*, CNET News.com (Nov. 18, 2003) <http://news.com.com/2100-7352-5108908.html> (describing Verizon's plans to offer VoIP services to customers using its broadband facilities).

[40] *See* Grant and Zuckerman, *Redialing the Internet Frenzy?* Wall St. J., Nov. 13, 2003, at C1 (Grant and Zuckerman).

[41] *See id.* at C1 (noting that many customers, especially enterprise customers, found the sound quality associated with early IP telephony to be unacceptable); *see also* Presentation by Michael Kende, Principal Consultant, Analysys Consulting, to FCC Staff, *Voice over IP Business Models* 3 (Jan. 29, 2004).

[42] Cable operators and wireline carriers have developed and deployed technology that overcomes prior voice quality issues. CableLabs, the cable industry's research and development group, has developed so-called PacketCable specifications that are designed to provide quality of service (QoS) to a variety of IP-enabled services. PacketCable is built on top of the DOCSIS 1.1 cable modem infrastructure that uses IP technology to enable a wide range of multimedia services, such as IP telephony, multimedia conferencing, interactive gaming, and general multimedia applications. Among these services, VoIP is the first service delivered over the PacketCable architecture. Because PacketCable mandates the use of a managed IP network, in that services are not delivered over the Internet, PacketCable compliant systems are able to guarantee priority delivery of voice IP packets over other data packets on the DOCSIS access network. CableLabs has already certified products that meet the PacketCable specifications, such as DOCSIS 1.1 modems that incorporate multimedia terminal adaptors (MTA) that permit a customer to connect a telephone directly to a cable modem. *See* David McIntosh & Maria Stachelek, *VoIP Services: PacketCable Delivers a Comprehensive System* (visited Jan. 7, 2004) <http://www.packetcable.com/downloads/NCTA02_VOIP_Services.pdf>.

Wireline carriers and their partners, such as Telcordia, have also developed solutions for voice quality issues. Some wireline carriers intend to use protocols such as multiprotocol label switching (MPLS), which is an application that runs on an IP network's routers, provides switching capability, and gives priority QoS to certain IP packets. When an IP packet enters the IP network, the MPLS places labels on that packet which determine whether it will receive priority treatment over other packets that transit the network. When an MPLS-labeled priority packet arrives at a router, once that router determines that the MPLS has granted that IP packet priority, it will send the packet through the router before non-priority packets, and it will send the packet on a route through the IP network that has the least congestion. The carrier solution also uses SIP for signaling purposes. *See SBC Nov. 19 Presentation* at 16-17.

services that traditional telephony providers may offer alongside voice service,[43] and increasing penetration of broadband into the residential market[44] have become important market drivers promoting deployment of IP telephony technologies. In addition, market entry by IP service providers such as Vonage appears to have spurred deployment of IP-enabled voice services by established telephony providers.[45]

a. IP Telephony Offerings by Owners of Transmission Facilities

12. As noted above, an IP network transmits IP packets, which may contain data that, when unpacked, forms voice communication. Cable operators, wireline carriers, and wireless providers have announced that they have begun to deploy, or intend to deploy, IP networks to transmit IP telephony services to their subscribers. Cable operators have begun to offer video, broadband Internet, and IP telephony over their hybrid fiber-coaxial cable plant. Time Warner Cable predicts that it will offer IP telephony to all of its subscribers by the end of 2004.[46] To achieve this goal, Time Warner recently entered into an agreement with MCI and Sprint to use those companies' networks to provide IP telephony to its cable subscribers and to interconnect their calls with the PSTN.[47]

13. AT&T states that it will provide VoIP service in 100 markets by the first quarter of 2004 and expects to enroll over one million customers in the next two years.[48] Other wireline carriers have announced plans to launch IP telephony services in 2004.[49] SBC currently offers IP telephony to small and medium size enterprises (SMEs) in 13 states, and BellSouth plans to

---

[43] *See* Douglas Sicker, *Delocalization in Telecommunications Networks*, The Progress & Freedom Foundation at 19 (Jan. 2004) < http://pff.org/publications/communications/pop11.2delocalization.pdf> ("In the long run, VoIP's true advantages (*e.g.*, integrated networks and flexible service platforms) will be what drives its success.").

[44] *See* Grant & Latour (noting that the "spread of broadband connections" makes "VoIP much easier to use").

[45] *See id.* (noting that some top telecommunications carriers are testing their own IP telephony offerings in response to the "newfound success" of VoIP companies).

[46] *See* Presentation by John Billock, Vice Chairman & Chief Operating Officer, Time Warner Cable, to FCC VoIP Forum, at 5 (Dec. 1, 2003) <http://www.fcc.gov/voip> (*Time Warner VoIP Forum Presentation*). Time Warner recently introduced IP telephony to a small community in Maine, where it has an agreement with a competitive LEC to facilitate outgoing and incoming calls to and from the PSTN. *See id.*

[47] *See* MCI, *MCI and Time Warner Cable Partner to Deliver Next Generation, IP-Enabled Communications*, Press Release (Dec. 8, 2003); Ben Charny and Jim Hu, *Time Warner Cable Reaches VoIP Deals*, CNET News.com (visited Jan. 14, 2004) <http://news.com.com/2100-7352-5116936.html>.

[48] *See* Shawn Young, *AT&T to Launch Internet-Based Telephone Service*, Wall St. J. B6 (Dec. 11, 2003). AT&T's CEO David Dorman states, "Unlike many of our competitors, who are constrained by geographic reach or broadband access technologies, our voice over IP will be available in cities across America to customers with different kinds of broadband access." Margaret Kane & Scott Ard, *AT&T to Offer Internet Calling*, CNET News.com (Dec. 11, 2003) <http://news.com.com/2100-7352-5119779.html>.

[49] *See* Jo Maitland, *RBOC VOIP Coming in 2004*¸ Boardwatch (Nov. 11, 2003).

rollout service to SMEs in 9 states throughout 2004. Qwest announced that it would offer IP telephony to residential subscribers and SMEs in Minnesota in December 2003. Finally, Verizon intends to offer IP telephony to its DSL subscribers nationwide in the second quarter of 2004, and to businesses in the fourth quarter of 2004.[50]

14. Wireless service providers have also begun providing IP telephony services. Second generation (2G) mobile communications systems solely using circuit-switched networks to provide voice service are now being supplemented by 2.5G and 3G systems providing enhanced multimedia services built on packet switching and IP routing.[51] For example, Verizon Wireless and Sprint PCS have recently launched push-to-talk service,[52] using VoIP technology, and additional carriers are expected to launch push-to-talk service this year.[53] Voice services will also be provided by service providers using WiFi technology.[54]

b. IP Telephony Offerings By Other Providers

15. Providers not owning extensive facilities – or any facilities at all – have also begun to offer IP telephony services to residential end users. For example, pulver.com (Pulver) operates Free World Dialup (FWD), an Internet application that facilitates FWD members engaging in free peer-to-peer communications, exchanging voice, video, or text. FWD subscribers use a Session Initiation Protocol (SIP) phone or personal computer[55] to make "calls" to other FWD members that do not utilize the PSTN. Pulver states that the members' end-user devices establish the actual connection and manage the call, and that the calls are carried by the members' preexisting broadband connection rather than over Pulver-owned facilities.[56] Vonage offers an IP telephony service that permits a subscriber with a broadband connection to place telephone calls to, and to receive calls from, other Vonage broadband subscribers and end users

---

[50] *See id.*

[51] For example, Verizon Wireless recently announced plans to rollout its 3G broadband network nationwide. *See* Verizon Wireless, *Verizon Wireless Announces Roll Out of National 3G Network*, Press Release (Jan. 8, 2004).

[52] "Push-to-talk" services allow CMRS subscribers to use their mobile phones to send instant voice communications to an individual or group of users.

[53] *See* Verizon Wireless, *Verizon Wireless Launches National Push to Talk Service*, Press Release (Aug. 14, 2003); Sprint, *Sprint Launches Nationwide Two-Way Walkie-Talkie Style Service to Customers with a Quick Way to Communicate One-on-One or in Groups*, Press Release (Nov. 17, 2003).

[54] *See* Sue Marek, *Wi-Fi Winds Its Way Into Phones,* WirelessWeek (visited Jan. 15, 2004) <http://www.wirelessweek.com/article/CA326389?text=wi%2Dfi+winds+its+way+into+phones&stt=001>.

[55] *See* Petition for Declaratory Ruling that pulver.com's Free World Dialup is Neither Telecommunications Nor a Telecommunications Service, WC Docket No. 03-45 at 3-4 (filed Feb. 5, 2003) (*Pulver Petition*).

[56] *See id.* at 2-3.

relying on traditional PSTN facilities alike.[57] Vonage does not provide its customers with Internet access or a personal computer. Rather, Vonage supplies software and a multimedia terminal adapter (MTA) that permits its customers to use analog phones to place calls via their broadband Internet connections.[58] Vonage provides each of its customers with traditional telephone numbers so that Vonage customers may be called by PSTN telephone subscribers.[59] When a Vonage customer communicates with a subscriber of ordinary telephone service, Vonage converts its customer's IP packets into the digital TDM (time division multiplexed) format for transfer through a media gateway to the PSTN, and vice versa.[60] If a Vonage customer communicates with another Vonage customer, this transmission does not utilize the PSTN and Vonage servers use SIP to direct the call to the other customer's personal computer or MTA.[61]

2. Other New and Future IP-Enabled Services

16. As discussed above, software developers expect to introduce IP-enabled data applications that take advantage of broadband speeds. In addition, as telephone service is migrated to an IP network, telephony providers plan to provide new IP-enabled data features that will enhance the telephony experience. Software developers are also upgrading traditional IP-enabled data services, such as instant messaging, e-mail, web surfing, gaming, and virtual private networks, to provide new features and capabilities that capitalize on the availability of higher speeds. As these services – which may integrate voice, video, and data capabilities while maintaining high quality of service – are introduced, it may become increasingly difficult, if not impossible, to distinguish "voice" service from "data" service, and users may increasingly rely on integrated services using broadband facilities delivered using IP rather than the traditional PSTN. Analysts predict the increasing integration of IP-enabled services with devices other than telephones and computers.

17. These new services will likely come in many varieties. For example, analysts predict that high-speed broadband connections will fuel the use of video-conferencing, on-demand conferencing, and collaboration on documents while conferencing.[62] These video calls

---

[57] *See* Vonage Petition for Declaratory Ruling, WC Docket No. 03-211, at iii, 9 (filed Sept. 22, 2003) (*Vonage Petition*). Vonage customers cannot access the Vonage service with dial-up connections. *See id.* at 4.

[58] *See id.* at 5. Some of Vonage's customers use "native IP phones," which produce digital signals and can only be used with an Internet connection and are incompatible with the PSTN. *Id.*

[59] *See id.* at 8 ("The telephone number associated with the Vonage customer is not tied to the customer's physical location. Rather, the telephone number is mapped to the digital signal processor contained in the customer's computer, enabling Vonage to identify and serve that customer over any Internet connection.").

[60] *See id.* at 6-7.

[61] *See id.* at iii, 6-7.

[62] *Sprint Nov. 17 Presentation*.

and conferences may be accompanied by the transmission of data.[63] Some applications that are currently used by enterprise customers, or that may in the future be used by such customers, include distance training, Internet classrooms, IP customer support centers, voice-enabled transactions and content services, subscription video, and telemedicine.[64]

18. With regard to telephone calls, IP-enabled data services might include virtual telephone numbers, directory dialing, automated voicemail attendants, call pre-screening, and call forwarding of pre-screened calls to other IP enabled devices, such as a computer or wireless phone.[65] Industry analysts also contemplate a unified messaging or a unified mailbox that collects a user's e-mail, voicemail, and faxes, which may be accessed through the web, a telephone or any other IP-enabled device.[66] These services permit users to decide which media they would like to use to respond to a given message.[67] For example, software might read a user's e-mail messages or faxes to him or her over the telephone, allowing the user to respond via e-mail, voicemail, facsimile, or voice telephony.[68]

19. Software developers are embedding traditional IP-enabled data services with voice features. For example, both America Online's and Microsoft Windows XP's instant messaging (IM) clients include a voice feature, as do many chat applications.[69] "Click to talk" services offered by Web- or E-mail-based applications permit customers to click on a web button in order to speak with a service operator or to enter into an instant messaging session with the service operator.[70] Map and navigation services and online gaming services also contain voice

---

[63] *See* Presentation by Ming Lai, Telcordia Technologies, to FCC Staff, *Voice Over IP Overview: Services, Architectures, Ordering, and Billing* at 6 (May 19, 2003) (*Telcordia May 19 Presentation*).

[64] *See id.* at 6.

[65] *See* AT&T, *Services over Internet Protocol: Voice is Just the Beginning* at 3 (Dec. 2003) <http://www.fcc.gov/voip> (*AT&T FCC VoIP Forum Submission*) (discussing desktop multimedia tools to provide these IP-enabled data services for voice communications); *Telcordia May19 Presentation* at 6; Grant & Latour ("[U]sers will be able to redirect calls to other numbers, take messages only during certain hours, [and] give messages only to certain callers.")

[66] *See AT&T FCC VoIP Forum Submission* at 3 (universal messaging); Telcordia *May 19 Presentation* at 6; Michael Rogers, *Will Telephone Calls Be Free?,* Newsweek (last modified Dec. 16, 2003) <http://msnbc.msn.com/id/3730179> (discussing an integrated "communications package that also includes voicemail, email, fax, instant messaging and video-conferencing").

[67] *See Sprint Nov. 17 Presentation;* Rogers ("[C]lever Web interfaces will let your convert your voicemail messages to email, or your emails to voice.").

[68] *Sprint Nov. 17 Presentation;* Rogers (discussing "myriad of ways" that a user may respond to a voicemail message or email).

[69] *Telcordia May 19 Presentation* at 6; Rogers (Web portals may offer telephone service as part of email and instant message packages).

[70] *Telcordia May 19 Presentation* at 6.

components.[71] Many PC and console games, such as Microsoft's Xbox, permit their owners to play against other players via peer-to-peer Internet connections.[72] Many of these games permit the gamers to speak with each other via the Internet as they play.[73]

20. Applications providers are preparing to provide IP-enabled services over devices other than phones and computers.[74] Microsoft is currently testing its Internet Protocol television (IPTV) product, which it hopes will offer television subscribers more advanced services, such as HDTV, VOD, interactive television, instant channel changing, multiple pictures-in-picture, and a richer multimedia program guide, via their broadband connections.[75] In addition, Microsoft has already enabled VoIP capability in Windows CE devices by incorporating SIP into that operating system.[76] Personal digital assistants (PDAs) are currently capable of transmitting voice and other data using IP technology; additional IP applications are expected to be developed for PDAs and other mobile devices in the future.[77] Moreover, IP-enabled services are now or may soon be accessed through, or facilitate use of, cameras, home appliances, digital video recorders, medical devices, and other equipment.

21. Mobile services have also benefited from technological advances. Second-generation (2G) cellular and PCS systems, mainly using voice circuit-switched networks and low data rates, are now being supplemented or replaced by "2.5G" networks[78] supporting both circuit-switched and packet-switched services. Both Sprint and Verizon Wireless operate cdma2000 1x networks. Verizon Wireless, for example, currently operates a data-only overlay

---

[71] *Telcordia May 19 Presentation* at 6.

[72] *See* XBOX, *Xbox Live* (visited Dec. 18, 2003) <http://www.xbox.com/en-us/live/games/default.htm> (*Xbox Live*); GameSpy Industries, *gamespy arcade* (visited Dec. 18, 2003) <http://www.gamespyarcade.com> (*Gamespy*) (a web site for PC gamers to meet and play against each other online).

[73] *See Xbox Live; Gamespy;* Presentation by Kevin Werbach, Supernova Group LLC, to FCC VoIP Forum, at 5 (Dec. 1, 2003) <http://www.fcc.gov/voip> (*Werbach VoIP Forum Presentation*) (asking whether game chat devices "count as phones").

[74] *See Werbach VoIP Forum Presentation* at 4-5 (discussing the convergence of IP-enabled services and devices, including personal digital assistants (PDAs)); *AT&T FCC VoIP Forum Submission* at 4 (protocol conversion is occurring in many consumer devices, including cell phones that are also PDAs, SIP telephones that are also Java computing devices, and WiFi handsets that are SIP endpoints).

[75] *See* Alan Breznick, *Microsoft Pitches IPTV Initiative to MSOs and Telcos: Software Giant Aims to Make Commercial Product Available by End of 2004*, Cable Datacom News (Nov. 1, 2003) <http://www.cabledatacomnews.com/nov03/nov03-6.html>.

[76] *See* Microsoft, *Device Platforms* (visited Feb. 12, 2004) <http://msdn.microsoft.com/embedded/devplat/default.aspx> (describing Windows CE).

[77] *See Werbach VoIP Forum Presentation* at 4-5 (PDAs, wireless phones and push-to-talk devices that use an IP network for voice transmission); *AT&T FCC VoIP Forum Submission* at 3 (push-to-talk cellular services).

[78] *See supra* para. 14.

network based on the 1x EV-DO (evolution – data optimized) standard in Washington DC and San Diego, allowing up to 300 kbps to 500 kbps data rates.[79] Cingular and AT&T Wireless operate GSM/GPRS networks which allow voice circuit switched as well multi-media services.

22. Thus, as use of IP expands, the technology's transformative effect on the communications landscape will likely become only more prominent, giving rise to a "virtuous circle" in which competition begets innovation, which in turn begets more competition. End users are likely to enjoy greater and greater flexibility in designing or selecting communications packages that suit their individual needs, and can be expected to access those packages over networks of their choosing, on devices of their choosing. Many parties contend that, in all probability, cross-platform competition will sharpen as distinctions between "voice," "video," and "data" services blur. This competition will likely force more innovation and lower prices, resulting in more individual choice and hence even greater competition.

B. Legal Background

23. Our consideration of issues surrounding IP-enabled services and applications takes place within a legal framework comprised of statutory provisions and judicial precedent, prior Commission orders, ongoing Commission proceedings, and state actions relating to IP-enabled services. An understanding of this legal context is important to ensuring full consideration of the issues raised in this Notice.

1. Statutory Definitions and Commission Precedent

24. The Communications Act and prior Commission orders set forth several definitions relevant to our consideration of VoIP and other IP-enabled services. First, the Act defines the terms "common carrier" and "carrier" to include "any person engaged as a common carrier for hire, in interstate or foreign communication by wire or radio." The Act specifically excludes persons "engaged in radio broadcasting" from this definition.[80] Various regulatory obligations and entitlements set forth in the Act – including a prohibition on unjust or unreasonable discrimination among similarly situated customers and the requirement that all charges, practices, classifications, and regulations applied to common carrier service be "just and reasonable"[81] – attach only to entities meeting this definition.

25. Second, the Commission has long distinguished between "basic" and "enhanced" service offerings. In the *Computer Inquiry* line of decisions,[82] the Commission specified that a

---

[79] *See* Verizon Jan. 8, 2004 Press Release.

[80] 47 U.S.C. § 153(10).

[81] *See* 47 U.S.C. §§ 201-02.

[82] *See Regulatory and Policy Problems Presented by the Interdependence of Computer and Communication Services and Facilities*, Docket No. 16979, Notice of Inquiry, 7 FCC 2d 11 (1966) (*Computer I NOI*); *Regulatory and Policy Problems Presented by the Interdependence of Computer and Communication Services and Facilities*, (continued….)

"basic" service is a service offering transmission capacity for the delivery of information without net change in form or content.[83] Providers of "basic" services were subjected to common carrier regulation under Title II of the Act.[84] By contrast, an "enhanced" service contains a basic service component but also "employ[s] computer processing applications that act on the format, content, code, protocol or similar aspects of the subscriber's transmitted information; provide the subscriber additional, different, or restructured information; or involve subscriber interaction with stored information."[85] The Commission concluded that enhanced services were subject to the Commission's jurisdiction.[86] It further found, however, that the enhanced service market was highly competitive with low barriers to entry; therefore, the Commission declined to treat providers of enhanced services as "common carriers" subject to regulation under Title II of the Act.[87] In separate orders, the Commission also determined that exempted enhanced service providers (ESPs) should not be subjected to originating access charges for ESP-bound traffic.[88]

26. In 1996, the Telecommunications Act codified, with minor modifications, the Commission's distinction between regulated "basic" and largely unregulated "enhanced" services. The 1996 Act defined "telecommunications" to mean "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."[89] The Act then defined "telecommunications service" to mean "the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available to the public, regardless of facilities used."[90] The Commission has concluded, and courts have agreed, that the

(Continued from previous page)
Docket No. 16979, Final Decision and Order, 28 FCC 2d 267 (1971) (*Computer I Final Decision*); *Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry)*, Docket No. 20828, Tentative Decision and Further Notice of Inquiry and Rulemaking, 72 FCC 2d 358 (1979) (*Computer II Tentative Decision*); *Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry)*, Docket No. 20828, Final Decision, 77 FCC 2d 384 (1980) (*Computer II Final Decision*); *Amendment of Section 64.702 of the Commission's Rules and Regulations (Third Computer Inquiry)*, CC Docket No. 85-229, Report and Order, 104 FCC 2d 958 (1986) (*Computer III*) (subsequent cites omitted) (collectively the *Computer Inquiries*).

83 *Computer II Final Decision*, 77 FCC 2d at 419-22, paras. 93-99.

84 *Id.* at 428, para. 114.

85 47 C.F.R. § 64.702; *see also Computer II Final Decision*, 77 FCC 2d at 420-21, para. 97.

86 *Computer II Final Decision*, 77 FCC 2d at 432, para. 125.

87 *Id.* at 432-35, paras. 126-132.

88 *MTS and WATS Market Structure*, CC Docket No. 78-72 Phase I, Memorandum Opinion and Order, 97 FCC 2d 682, 715, para. 83 (1983) (*MTS/WATS Market Structure Order*); *Amendments of Part 69 of the Commission's Rules Relating to Enhanced Service Providers*, CC Docket No. 87-215, Order, 3 FCC Rcd 2631, 2633, para. 17 (1988) (*ESP Exemption Order*).

89 47 U.S.C. § 153(43).

90 47 U.S.C. § 153(46).

"telecommunications service" definition was "intended to clarify that telecommunications services are common carrier services."[91] Various entitlements and obligations set forth in the Act – including, for example, the entitlement to access an incumbent's unbundled network elements for local service[92] and the obligation to render a network accessible to people with disabilities[93] – attach only to entities providing "telecommunications service."

27. By contrast, the 1996 Act defined "information service" to mean "the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications, and includes electronic publishing, but does not include any use of any such capability for the management, control, or operation of a telecommunications network or the management of a telecommunications service."[94] The Act did not establish any particular entitlements or requirements with regard to providers of information services, but the Commission has exercised its ancillary authority under Title I of the Act to apply requirements to information services.[95]

---

[91] *Cable & Wireless, PLC,* Order, 12 FCC Rcd 8516, 8521, para. 13 (1997); *see also Virgin Islands Tel. Corp. v. FCC*, 198 F.3d 921, 926-27 (D.C. Cir. 1999).

[92] *See* 47 U.S.C. § 251(c)(3).

[93] *See* 47 U.S.C. § 255(c).

[94] 47 U.S.C. § 153(20). We note that the "information service" category includes all services that the Commission previously considered to be "enhanced services." *See Implementation of the Non-Accounting Safeguards of Sections 271 and 272 of the Communications Act of 1934, as Amended*, CC Docket No. 96-149, First Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 21905, 21956-57, para. 102 (1996) (subsequent history omitted). Specifically, enhanced services are defined in section 64.702(a) of the Commission's rules as "services, offered over common carrier transmission facilities used in interstate communications, which employ computer processing applications that act on the format, content, code, protocol or similar aspects of the subscriber's transmitted information; provide the subscriber additional, different, or restructured information; or involve subscriber interaction with stored information," and include, among other things, such services as voicemail, electronic mail, facsimile store-and-forward, interactive voice response, protocol processing, gateway, and audiotext information services. 47 C.F.R. § 64.702(a).

[95] *See, e.g.*, *Implementation of Section 255 and 251(a)(2) of the Communications Act of 1934, as Enacted by the Telecommunications Act of 1996*, WT Docket No. 96-198, Report and Order and Further Notice of Inquiry, 16 FCC Rcd 6417, 6455-62, paras. 93-108 (1999) (*Disability Access Order*) (invoking ancillary authority to impose section 255-like obligations on providers of voicemail and interactive menu services); *see also Computer II Final Decision*; *Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry)*, Memorandum Opinion and Order, 84 FCC 2d 50 (1980) (*Computer II Reconsideration Decision*); *Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry)*, Memorandum Opinion and Order on Further Reconsideration, 88 FCC 2d 512 (1981) (*Computer II Further Reconsideration Decision*) (asserting ancillary jurisdiction over enhanced services, including voicemail and interactive menus, as well as over CPE).

2. Commission Consideration of VoIP

28. While the Commission has not addressed IP-enabled services in a comprehensive and definitive manner, the Commission has discussed issues relating to VoIP. Moreover, there are several petitions relating to this issue currently pending before the Commission. These items are briefly described below.

a. Stevens Report

29. In a 1998 Report to Congress known as the "Stevens Report,"[96] the Commission considered the proper classification of IP telephony services under the 1996 Act.[97] In that Report, the Commission declined to render any conclusions regarding the proper legal and regulatory framework for addressing these services, stating that "definitive pronouncements" would be inappropriate "in the absence of a more complete record focused on individual service offerings."[98] The Commission did, however, observe that in the case of "computer-to-computer" IP telephony, where "individuals use software and hardware at their premises to place calls between two computers connected to the Internet," the Internet service provider did not appear to be "providing" telecommunications, and the service therefore appeared not to constitute "telecommunications service" under the Act's definition of that term.[99] In contrast, a "phone-to-phone" IP telephony service relying on "dial-up or dedicated circuits … to originate or terminate Internet-based calls" appeared to "bear the characteristics of 'telecommunications services,'"[100] so long as the particular service met four criteria:

> (1) it holds itself out as providing voice telephony or facsimile transmission service; (2) it does not require the customer to use CPE different from that CPE necessary to place an ordinary touch-tone call (or facsimile transmission) over the public switched telephone network; (3) it allows the customer to call telephone numbers assigned in accordance with the North American Numbering Plan, and associated international agreements; and (4) it transmits customer information without net change in form or content.[101]

---

[96] *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report to Congress, 13 FCC Rcd 11501 (1998) (*Stevens Report*).

[97] *See id.* at 11541-45, paras. 83-93.

[98] *See id.* at 11541, para. 83.

[99] *Id.* at 11543, para. 87.

[100] *Id.* at 11544, para. 89.

[101] *Id.* at 11543-44, para. 88.

30. With respect to protocol conversion and phone-to-phone services, the Commission noted that its *Non-Accounting Safeguards Order* determined that "certain protocol processing services that result in no net protocol conversion to the end user are classified as basic services; those services are deemed telecommunications services."[102] The Commission further stated that "[t]he protocol processing that takes place incident to phone-to-phone IP telephony does not affect the service's classification, under the Commission's current approach, because it results in no net protocol conversion to the end user."[103] Moreover, the Commission observed that "[t]he Act and the Commission's rules impose various requirements on providers of telecommunications, including contributing to universal service mechanisms, paying interstate access charges, and filing interstate tariffs."[104] The Commission also predicted that future proceedings would require it to consider "the regulatory status of various specific forms of IP telephony, including the regulatory requirements to which phone-to-phone providers may be subject if we were to conclude that they are 'telecommunications carriers.'" Specifically, the Commission noted that to the extent it concluded that phone-to-phone IP telephony services constituted "telecommunications service[s]" and obtain the same circuit-switched access as obtained by other interexchange carriers, the Commission "may find it reasonable that [providers of such services] pay similar access charges."[105] However, the Commission has also stated in its *Intercarrier Compensation NPRM* that IP telephony "threatens to erode access revenues for LECs because it is exempt from the access charges that traditional long-distance carriers must pay."[106]

b. Disability Access NOI

31. In 1999, the Commission issued an order implementing the disability accessibility provisions found in sections 251(a)(2) and 255 of the Act.[107] The Commission attached to that Order a Notice of Inquiry raising specific questions regarding the application of these sections and the Commission's implementing regulations in the context of "IP telephony" and "computer-based equipment that replicates telecommunications functionality."[108] That Notice sought comment on the extent to which Internet telephony was impairing access to communications services among people with disabilities, the efforts that manufacturers were taking to render new

---

[102] *Id.* at 11526, para. 50 (citing *Non-Accounting Safeguards Order*, 11 FCC Rcd at 21958, para. 107).

[103] *Id.* at 11527, para. 52.

[104] *Id.* at 11544, para. 91.

[105] *Id.* at 11544-45, para. 91; *see also Developing a Unified Intercarrier Compensation Regime*, CC Docket No. 01-92, Notice of Proposed Rulemaking, 16 FCC Rcd 9610 (2001) (*Intercarrier Compensation NPRM*).

[106] *Intercarrier Compensation NPRM*, 16 FCC Rcd at 9657 para. 133.

[107] *See generally Disability Access Order*, 16 FCC Rcd 6417; *infra* paras. 58-60.

[108] *Disability Access Order*, 16 FCC Rcd at 6483-84, para. 175; *see generally id.* at 6483-6486, paras. 173-85.

technologies accessible, and the degree to which these technologies should be subjected to the same disability access requirements as traditional telephony facilities.[109]

c. Pending Petitions

32. Several parties have filed petitions asking the Commission to rule on the proper legal classification and regulatory treatment of various IP-enabled services. The services at issue in these petitions differ markedly, ranging from (1) a "phone-to-phone" service using IP to transport interexchange traffic to (2) an Internet application that facilitates peer-to-peer communications or to (3) services permitting IP telephony subscribers to communicate with subscribers of traditional circuit-switched telephone service to (4) a broad range of "IP platform services."[110] Today, in a separate order, we resolve one of these petitions, finding that Pulver's Free World Dialup is an unregulated information service – that does not use the PSTN – subject to federal jurisdiction.[111] We hereby incorporate the records of the pending AT&T, Vonage and Level 3 petitions and note that the record developed here could influence disposition of those proceedings.[112] We note, however, that by seeking comment on whether access charges should apply to the various categories of service identified by the commenters, we are not addressing

[109] *See id.* at 6484-86, paras. 179-85.

[110] *See* Petition for Declaratory Ruling that AT&T's Phone-to-Phone IP Telephony Services are Exempt from Access Charges, WC Docket No. 02-361 (filed Oct. 18, 2002); *Pulver Petition*; *Vonage Petition*; Level 3 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 (filed Dec. 23, 2003); Petition of SBC Communications Inc. for Declaratory Ruling (filed Feb. 5, 2004) (defining "IP platform services" to include networks relying on IP, the capabilities and functionalities of those networks, and services and applications utilizing those networks to facilitate communications). SBC has also filed a petition seeking forbearance from application of Title II regulations in the context of "IP platform services." *See* Petition of SBC Communications Inc. for Forbearance, WC Docket No. 04-29 (filed Feb. 5, 2004). The Commission has solicited public comment on that petition. *See Pleading Cycle Established for Comments on Petition of SBC Communications Inc. for Forbearance Under Section 10 of the Communications Act from Application of Title II Common Carrier Regulation to "IP Platform Services,"* WC Docket No. 04-29, Public Notice, DA 04-360 (rel. Feb. 12, 2004).

[111] *See Pulver Declaratory Ruling*.

[112] In so doing, we also expressly preserve the Commission's flexibility to address one or all of these petitions by issuing a declaratory ruling or rulings before the culmination of the instant proceeding. We also expressly preserve the Commission's flexibility to address the *Intercarrier Compensation* and *Universal Service* proceedings currently pending before the Commission before the culmination of the instant proceeding. *See Intercarrier Compensation NPRM*, 16 FCC Rcd 9610 (2001); *Federal-State Joint Board on Universal Service, 1998 Biennial Regulatory Review – Streamlined Contributor Reporting Requirements Associated with Administration of Telecommunications Relay Service, North American Numbering Plan, Local Number Portability, and Universal Service Support Mechanisms, Telecommunications Services for Individuals with Hearing and Speech Disabilities, and the Americans with Disabilities Act of 1990, Administration of the North American Numbering Plan and North American Numbering Plan Cost Recovery Contribution Factor and Fund Size, Number Resource Optimization, Telephone Number Portability, Truth-in-Billing and Billing Format*, CC Docket Nos. 96-45, 98-171, 90-571, 92-237, 99-200, 95-116, 98-170, Report and Order and Second Further Notice of Proposed Rulemaking, 17 FCC Rcd 24952, 24984-98, paras. 66-100 (2002) (*Universal Service Further NPRM*).

whether access charges apply or do not apply under existing law.

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.

d. State Regulation

34. We also note that states are beginning to address VoIP issues. Recently, several states have taken actions with regard to VoIP providers that are rapidly changing the regulatory landscape on the state level.[113] Even at this early stage, states have begun to diverge in their approaches to the regulation of VoIP services. For example, some states have required VoIP providers to be certified to provide service in the state,[114] while others have not.[115]

---

[113] *See, e.g., State Telecom Activities*, Communications Daily, Jan. 8, 2004, at 7 (reporting that, after notifying VoIP providers that they must comply with state telephone regulations, the California Public Utilities Commission has now decided to open a proceeding to examine regulation of VoIP providers rather than taking immediate enforcement action against VoIP providers that did not comply); *State Telecom Activities*, Communications Daily, Dec. 3, 2003, at 9 (reporting that the Missouri Public Service Commission has called for comments on Time Warner Cable Information Services' application for a state certificate to provide VoIP services); *State Telecom Activities*, Communications Daily, Nov. 24, 2003, at 7 (reporting that the Ohio Public Utilities Commission of Ohio is considering an application by Time Warner Cable Information Services for a state certificate to provide VoIP services); *State Telecom Activities*, Communications Daily, Oct. 15, 2003 (reporting that the New York Public Service Commission has opened a case to consider its jurisdiction over VoIP services in response to an incumbent LEC complaint seeking to impose state telephone regulation on VoIP providers); *State Telecom Activities*, Communications Daily, Oct. 8, 2003 (reporting that the Washington Utilities & Transportation Commission, in response to a remand from a federal district court, began considering whether VoIP providers must register as competitive LECs and what state regulatory requirements should apply to VoIP providers).

[114] For example, in September 2003, the Minnesota Commission found that it had jurisdiction over the VoIP services provided by companies such as Vonage in Minnesota and ordered Vonage to comply with state statutes and rules regarding the offering of telephone service. *See Vonage Holdings Corp. v. Minnesota Pub. Utils. Comm'n*, 290 F. Supp. 2d 993, 996 (D. Minn. 2003) (citing *In the Matter of the 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) (order finding jurisdiction and requiring compliance)). Vonage sought review of this decision in federal court, and has also sought a ruling from the Commission regarding the issues raised by the Minnesota Commission's order. In a decision issued on October 16, 2003, the U.S. District Court for the District of Minnesota concluded that Vonage "*uses* telecommunications services, rather than provides them." *Id.* at 999 (emphasis in original). Further, the court held that "state regulation over VoIP services is not permissible because of the recognizable congressional intent to leave the Internet and information services largely unregulated." *Id.* at 1002. In the court's view, "Congress's expression of its intent to not have Title II apply to enhanced services demonstrates its intent to occupy the field of regulation of information services." *Id.* The Minnesota PUC has appealed this ruling. *See* Gayle Kansagor, *Minnesota PUC Appeals VoIP Ruling*, TR Daily, Feb. 13, 2004, at 7-8.

[115] Florida, for example, recently enacted legislation excluding VoIP services from the class of "services" subject to regulation by the Florida Public Service Commission. This legislation, however, expressly stated that it did not (continued….)

III. CATEGORIZING IP-ENABLED SERVICES

35. In this section, we solicit comment regarding how, if at all, we should differentiate among various IP-enabled services to ensure that any regulations applied to such services are limited to those cases in which they are appropriate. As noted above, IP-enabled services are an increasingly available, sophisticated and attractive alternative to consumers. These services have arisen in an environment largely free of government regulation, and the great majority, we expect, should remain unregulated. To the extent – if any – that application of a particular regulatory requirement is needed to further critical national policy goals, that requirement must be tailored as narrowly as possible, to ensure that it does not draw into its reach more services than necessary.[116] In order to guarantee that even those regulations deemed essential are applied only where needed, we seek comment as to whether it would be useful to divide IP-enabled services into discrete categories, and, if so, how we should define these categories. We also ask commenters to address whether there are technical or other characteristics of particular VoIP or other IP-enabled services that suggest that providers use the underlying network in different ways or provide different functionality to end users that warrants differential treatment. Further, we seek comment on how our regulatory framework should evolve over time, as IP-enabled services themselves evolve. In considering these issues, we ask commenters to address three central questions: In which cases is some form of regulation needed to pursue important national objectives? What differentiates those services for which some form of regulation is required from those for which it is not? Finally, in what relevant ways is a particular service like or unlike Pulver's Free World Dialup, which we have today classified as an "information" service, free from regulation under the Commission's current rules?

36. For purposes of stimulating analysis regarding the proper grounds for distinguishing among IP-enabled services, we provide below a list of functional and economic factors that might be used to divide these services into categories calling for distinct treatment, and ask commenters to address the utility of drawing distinctions based on these factors. As communications migrate from networks relying on incumbent providers enjoying monopoly ownership of underlying transmission facilities to an environment relying on numerous competing applications traversing numerous competing platforms, power over the prices and terms of service necessarily shifts from the provider to the end user. This shift raises the question whether our existing regulatory framework merits reevaluation. In establishing distinctions among various IP-enabled services, we seek ways to distinguish those regulations designed to respond to the dominance of centralized, monopoly-owned networks from those designed to protect public safety and other important consumer interests. We thus focus primarily on ways to distinguish services that might be viewed as replacements for traditional

(Continued from previous page)
"affect the rights and obligations of any entity related to the payment of switched network access rates or other intercarrier compensation, if any, related to voice-over-Internet protocol service." Fla. Stat. ch. 364.02(12) (2003).

[116] We believe, for example, that traditional economic regulation designed for the legacy network should not apply outside the context of the PSTN, and therefore will be inapplicable in the case of most IP-enabled services.

voice telephony (and which thus raise social policy concerns relating to emergency services, law enforcement, access by individuals with disabilities, consumer protection, universal service, and so forth) from other services (which do not appear to raise these same regulatory questions to the same extent).

37. We note that this list is not intended to be exhaustive, and we invite commenters to address any other characteristic that they believe should guide our decisions in this proceeding.[117] Further, we do not presuppose that any one ground must be considered to the exclusion of any other ground, and invite commenters to explain why we should categorize services using a combination of factors, which may or may not include any of those listed below. In addressing the relevance of any specific consideration, we urge commenters to focus on the reasons why particular regulations should or should not be applied to particular services, why the benefits of differential treatment will outweigh administrative or other costs associated with the more complicated regulatory environment resulting from categorization, and how the technical or functional aspects of the service warrant particular categorization.

- *Functional equivalence to traditional telephony:* Some IP-enabled services resemble traditional wireline telephony, while others do to a lesser degree. These functional differences likely shape end users' expectations regarding the service. For example, consumers might consider a telephone replacement IP-enabled service to be very much like traditional telephony, but may have none of the same expectations for a voice function on a gaming platform. Is a service's functional equivalence to traditional telephony an appropriate basis on which to draw distinctions among IP-enabled services, or is such a comparison an unproductive endeavor? If so, what tests might we employ to identify such functional equivalence? In determining whether current regulatory requirements should be applied to IP-enabled services, should the Commission draw distinctions between services that facilitate instantaneous, simultaneous communications and those that do not?

- *Substitutability*: Should any regulation be reserved for those IP-enabled services that are used in lieu of, rather than simply in addition to – traditional telephony?[118] Is a service's substitutability for traditional telephony an appropriate basis on which to draw distinctions among IP-enabled services? If so, what tests might we employ to identify substitutability? Should it matter, for purposes of categorization, whether the service at issue is provided to mass market or enterprise market customers?

[117] We note, too, that the features listed below overlap. We include overlapping criteria because, at the margins, these similar tests might give rise to different results (for example, a service might interconnect with the PSTN but, due to other features or limitations, not be deemed a "substitute" for traditional telephony).

[118] In strict economic terms, "substitutes" are services exhibiting positive cross-elasticity of demand. That is, two services are "substitutes" in the economic sense if demand for one rises when the price for the other increases, and falls when the price for the other drops. *See, e.g.*, Steven E. Landsburg, *Price Theory and Applications* 108 (3d ed. 1995).

- *Interconnection with the PSTN and Use of the North American Numbering Plan*: One key distinction among VoIP services is that dividing those services that offer interconnection with the PSTN and/or utilize traditional NANPA-administered telephone numbers from those – including "closed" networks but also online games and other services not used primarily for voice communication – that do not. For example, Vonage currently offers a VoIP service that allows customers to place voice calls to numbers served by traditional telecommunications carriers using the PSTN, or by other VoIP providers, and assigns its customers traditional telephone numbers.[119] Other services, however, might permit communication only within a single IP network or a set of intersecting IP networks, never interconnecting with the PSTN and/or never utilizing traditional telephone numbers. Should the Commission distinguish between such services on this basis?

- *Peer-to-Peer Communications vs. Network Services:* We solicit comment as to whether the Commission should distinguish between offerings that facilitate disintermediated peer-to-peer IP-enabled services (such as that offered by Pulver)[120] and IP-enabled services relying on a provider's centralized servers (such as that offered by Vonage). Should a service that functions and is sold to consumers as a dedicated voice network offering some additional enhanced functionality be regulated differently from a service that simply facilitates direct peer-to-peer voice communications between or among end users? What criteria should we employ to distinguish "peer-to-peer" services from other services?

- *Facility Layer vs. Protocol Layer vs. Application Layer*: In recent years, several observers have urged reliance on a "layered" model to address VoIP and other areas of regulatory concern.[121] Under the "layered" approach, regulation would differentiate not among different platforms, but rather among various aspects of a particular offering – distinguishing, for example, among the regulation applied to (1) the underlying transmission facility, (2) the communications protocols used to transmit information over that facility, and (3) the applications used by the end user to issue and receive information. Under a layered model, a provider's ownership of bottleneck facilities might warrant economic regulation of the facilities "layer" but not of the applications that traverse those facilities. We note that while certain legacy

[119] *Vonage Petition* at 6.

[120] We describe peer-to-peer services in note 30, above.

[121] *See, e.g.*, Kevin Werbach, *A Layered Model for Internet Policy* (Sept. 1, 2000) <http://www.edventure.com/conversation/article.cfm?counter=2414930>; Robert M. Entman, *Transition to an IP Environment*, The Aspen Institute (2001); Michael L. Katz, *Thoughts on the Implications of Technological Change for Telecommunications Policy*, The Aspen Institute (2001); Douglas C. Sicker, *Further Defining a Layered Model for Telecommunications Policy* (Oct. 3, 2002) <http://intel.si.umich.edu/tprc/papers/2002/95/LayeredTelecomPolicy.pdf>; MCI/CompTel Joint Reply, WC Docket No. 03-211 at 4 (filed Nov. 24, 2003).

services also involved severable "layers," some parties state that IP-enabled services riding numerous (primarily broadband) platforms appear to erode the links among the facility, the protocol, and the application more systematically than previous services. In categorizing IP-enabled services, should the Commission rely on a "layers" approach? If so, how should it define the relevant layers? If we adopt a "layers" approach, must we also take into account competition between and among layers and the substitutability of different platforms and services for one another at different layers? On a related note, in some cases, IP-enabled services are offered by companies that also own the underlying transmission facilities, thus raising the question of how to regulate entities that provide multiple layers.[122] Is ownership of such facilities relevant to our decisions here? We note that in other contexts, the Commission has countered the market power exercised by owners of bottleneck facilities by applying differential regulation to carriers that are deemed "dominant" and "non-dominant."[123] Should the Commission apply a similar distinction here? Moreover, how should the Commission treat cases in which services offered by different providers at different "layers" are combined to create an IP-enabled service, as that term is used here?

- *Other Grounds for Categorization:* We invite comment as to whether the Commission should distinguish among IP-enabled services on grounds not discussed above. Should the Commission differentiate between services offered on a "common carriage" and "private carriage" basis?[124] Between services that do and do not utilize

[122] *See supra* note 39.

[123] *See, e.g., Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefor*, First Report and Order, 85 FCC 2d 1 (1980) (subsequent history omitted) (adopting the dominant/nondominant framework); *Policy and Rules Concerning the Interstate, Interexchange Marketplace, Implementation of Section 245(g) of the Communications Act of 1934*, CC Docket No. 96-61, Second Report and Order, 11 FCC Rcd 20730 (1996) (subsequent history omitted) (adopting mandatory detariffing for the interstate, domestic, interexchange service of nondominant interexchange carriers); *Implementation of Section 402(b)(2)(A) of the Telecommunications Act of 1996*, CC Docket No. 97-11, Report and Order, 14 FCC Rcd 11364, paras. 29-32 (1999) (adopting differing discontinuance requirements for dominant and non-dominant carriers). The D.C. Circuit recently stated that "market forces are generally sufficient to ensure the lawfulness of rate levels, rate structures, and terms and conditions of service set by carriers who lack market power." *Orloff v. FCC*, 352 F.3d 415, 419, 421 (D.C. Cir. 2003) (quoting *Implementation of Sections 3(n) and 332 of the Communications Act Regulatory Treatment of Mobile Services*, GN Docket 93-252, Second Report and Order, 9 FCC Rcd 1411, 1478 (1994) (*CMRS Second Report and Order*)) (upholding Commission's determination to forbear from applying tariff requirements to CMRS providers lacking market power).

[124] Under the D.C. Circuit's so-called *NARUC I* decision (which predated, but survived, the 1996 Act), when considering whether a communications service is offered on a "private" or "common" carriage basis, the Commission first inquires whether there is a legal compulsion to serve the public indifferently, and then – if not – examines "whether there are reasons implicit in the nature of [the provider's] operations to expect an indifferent holding out to the eligible user public." *See Nat'l Ass'n of Regulatory Util. Comm'rs v. FCC*, 525 F.2d 630, 642 (D.C. Cir. 1976); *Virgin Islands Tel. Corp. v. FCC*, 198 F.3d at 924, 927.

the Internet? Should regulatory treatment depend on whether the service is being used as a "primary line" or whether, instead, it supplements an existing telephone line? Is there any utility to distinguishing between "phone-to-phone" services, "computer-to-computer" services, and "computer-to-phone" services, or to drawing other distinctions relating to the CPE used to access a service?[125] Should IP-enabled services be differentiated on the basis of the platform on which they are provided (*e.g.*, wireline, wireless, cable, satellite)? Finally, is there some other basis upon which the Commission should draw distinctions among IP-enabled services?

IV. JURISDICTIONAL CONSIDERATIONS

38. In this section, we seek comment on the jurisdictional nature of IP-enabled services. We note that in a recent declaratory ruling, the Commission determined that Pulver's Free World Dialup is an unregulated information service subject to federal jurisdiction. FWD is a peer-to-peer service that facilitates VoIP calls between subscribers by informing them when other subscribers are online or "present."[126] As noted above, FWD offers its members no transmission services. Subscribers must "bring their own broadband" connection. This high-speed connection can be through cable modem, digital subscriber line, satellite, wireless or any other high-speed facility. In addition, FWD provides subscribers with its own numbers, not North American Numbering Plan numbers.[127]

39. As explained in the *Pulver Declaratory Ruling*, FWD is an unregulated information service subject to federal jurisdiction. In this ruling, we explained that courts have recognized the preeminence of federal authority in the area of information services, particularly in the area the Internet and other interactive computer services.[128] This finding is consistent with Congress's clear intention, as expressed in the 1996 Act, that such services remain "unfettered" by federal or state regulation[129] and with our own "hands-off" approach to the Internet. We also determined that state-by-state regulation of FWD, an Internet application, is inconsistent with the controlling federal role over interstate commerce required by the Constitution. Moreover,

---

[125] *See Stevens Report*, 13 FCC Rcd at 11543-45, paras. 87-90.

[126] FWD offers other features to its members. For example, if the subscriber has opted in to FWD's voicemail service, FWD acts as a voicemail agent by accepting a call if a member is not available. Further, if a member's equipment generates a private Internet address that interferes with the ability of the user's CPE to determine Internet addresses, FWD will repair the addressing information and will relay the "signaling and media stream via a protocol conversion solution to facilitate delivery." *See Pulver Declaratory Ruling* at para. 11.

[127] This feature further emphasizes the fact that FWD member-to-member calls are routed over the Internet, not the PSTN.

[128] *See Pulver Declaratory Ruling* at paras. 17-18.

[129] *See, e.g.*, 47 U.S.C. § 230(b); *see also* 47 U.S.C. § 157 & nt (stating that, in general, it is policy of the United States to encourage the deployment of new technologies and services to the public, and, in particular, the Commission is required to encourage the deployment of advanced telecommunications capability).

because FWD is a completely portable Internet service and for other reasons, the Commission determined that its traditional end-to-end approach to determining jurisdiction was inappropriate. Even if this analysis were applicable, however, we would still find that FWD is an interstate service based on the Commission's "mixed use" doctrine.[130]

40. We seek comment on the appropriate basis or bases for asserting federal jurisdiction over the various categories of IP-enabled services. Specifically, we request comment on whether the Commission should extend the findings made in our *Pulver Declaratory Ruling* to other IP-enabled services. We also seek comment on whether the Commission's end-to-end analysis is similarly inappropriate for other IP-enabled services.[131] We emphasize that our discussion of the end-to-end analysis refers only to the jurisdictional analysis (*i.e.* the inquiry into whether a call is interstate or intrastate based on its end points) and not the analysis of whether protocol conversion occurs between the end points of a communication. As noted in the *Pulver Declaratory Ruling*, with Internet communications, the points of origination and termination are not always known.[132] Does the end-to-end analysis, designed to assess point-to-point communications, have any relevance in this new IP environment? To the extent we were to retain the end-to-end approach, we request comment on whether the Commission should apply its "mixed use" standard, described above, to other IP-enabled services. We also request comment on the capabilities of existing Internet geo-location technologies used to ascertain the location of the source of a packet. Specifically, are these technologies sufficiently accurate for purposes of determining the jurisdiction of some IP-enabled communications and how should they affect our jurisdictional analysis? In cases where the *Pulver Declaratory Ruling* analysis is inapposite, we seek comment as to whether there are other grounds on which we may assert federal jurisdiction over a given class of IP-enabled services. If we were to draw jurisdictional distinctions between classes of IP-enabled services, what service characteristics (*e.g.*, ability to determine the geographical location of the originating and terminating points of their customers' calls, use of the Internet) justify those distinctions?

41. We further seek comment regarding whether, and on what grounds, one or more classes of IP-enabled service should be deemed subject to *exclusive* federal jurisdiction with regard to traditional common carrier regulation. For example, the Constitution's Supremacy Clause prohibits state regulation in a variety of circumstances, including where the federal government occupies the field leaving no room for state regulation[133] or where it is not possible

---

[130] The Commission has previously applied the mixed use standard to situations where it was impractical or impossible to separate out interstate from intrastate traffic carried over a shared facility. *See Pulver Declaratory Ruling* at paras. 21-22 (citing *GTE Telephone Operating Cos., GTE Tariff No. 1, GTOC Transmittal No. 1148*, CC Docket No. 98-79, Memorandum Opinion and Order, 13 FCC Rcd 22466, 22468, para. 5 (1998); *MTS/WATS Market Structure Order*, 97 FCC 2d 682).

[131] *See generally Bell Atl. Tel. Cos. v. FCC*, 206 F.3d 1, 5-8 (D.C. Cir. 2000).

[132] *See Pulver Declaratory Ruling* at para. 21.

[133] *See, e.g.*, *Fidelity Fed. Sav. & Loan Ass'n v. Cuesta*, 458 U.S. 141, 153 (1980) (citing *Rice v. Santa Fe Elevator Corp*., 331 U.S. 218, 230 (1947)).

to separate the interstate and intrastate aspects of a particular matter, and state regulation would negate valid Commission regulatory goals.[134] Does either of these grounds – or any other ground contemplated by the Supremacy Clause – apply to IP-enabled services?[135] Does the Commerce Clause, which denies states "the power unjustifiably to discriminate against or burden the interstate flow of articles of commerce," apply to limit state regulation of IP-enabled services?[136] Alternatively, we note that section 253 preempts state regulations that "prohibit or have the effect of prohibiting the ability of an entity to provide any interstate or intrastate telecommunications service."[137] In addition, as to mobile radio services, section 332 of the Act preempts state or local governments from regulating the "entry of or the rates charged by any commercial mobile service or any private mobile service."[138] Do these provisions apply to any class of IP-enabled service? Finally, we seek comment regarding any other grounds upon which the Commission might form jurisdictional conclusions. What role could the states play in a federal regime? In addition, are there categories of IP-enabled services that can be regulated at both the state and federal level without interfering with valid Commission policy? If so, how? We seek comment on how section 2(b)'s reservation of state authority with respect to "intrastate communications service by wire or radio" affects our jurisdictional analysis.[139]

V. APPROPRIATE LEGAL AND REGULATORY FRAMEWORK

42. We invite commenters to address the proper legal classification and appropriate regulatory treatment of each specific class of IP-enabled services they have identified in response to the questions posed above. The Act distinguishes between "telecommunications service[s]" and "information service[s]," and applies particular regulatory entitlements and obligations to the former class but not the latter.[140] Thus, our analysis begins with an

---

[134] *Texas Office of Pub. Util. Counsel v. FCC*, 183 F.3d 393, 422 (5th Cir. 1999) (citing *Pub. Serv. Comm'n of Maryland v. FCC*, 909 F.2d 1510, 1515 (D.C. Cir. 1990)).

[135] As summarized by the Supreme Court, federal law and policy preempts state action: (1) when Congress expresses a clear intent to preempt state law; (2) when there is outright or actual conflict between federal and state law; (3) where compliance with both federal and state law is in effect physically impossible; (4) where there is implicit in federal law a barrier to state regulation; (5) where Congress has legislated comprehensively, thus occupying an entire field of regulation; or (6) where the state law stands as an obstacle to the accomplishment and execution of the full objectives of Congress. *See Louisiana Pub. Serv. Comm'n v. FCC*, 476 U.S. 355, 368-69 (1986) (further citations omitted). The Court also notes that the "critical question in any preemption analysis is always whether Congress intended that federal regulation supersede state law." *Id.* at 369. Additionally, the Supreme Court has held that preemption may result not only from action taken by Congress but also from a federal agency action that is within the scope of the agency's congressionally delegated authority. *See id*.

[136] *Oregon Waste Sys. v. Dep't of Envtl. Quality*, 511 U.S. 93, 98 (1994).

[137] 47 U.S.C. § 253.

[138] *See* 47 U.S.C. § 332(c)(3)(A).

[139] *Id.* § 152(b).

[140] *See, e.g.*, *supra* paras. 24-27.

examination of the statutory definitions as they apply to particular types of IP-enabled service. But, as described more fully, commenters must consider what policy consequences flow from a particular statutory definition. The Act reflects Congress' attempt to balance numerous policy objectives. For example, Congress stated that the Internet should remain free from regulation.[141] But Congress also has stated public policy goals that would presumably continue to apply as communications networks evolve. For example, it has stated that universal service should be maintained, that telecommunications equipment and services should remain usable by people with disabilities, that prompt emergency service should be available to the public through the 911 system, and that communications should be accessible to law enforcement officers acting on the basis of a lawfully obtained warrant.[142] The Commission is empowered by statute to weigh these various objectives and craft regulations that specifically target the relevant features of VoIP and other IP-enabled services. Where the Act does not prescribe a particular regulatory treatment, the Commission may have authority to impose requirements under Title I of the Act. Alternatively, the Commission may forbear from applying specific provisions. Finally, of course, the Commission is entitled to amend or revoke its own rules and regulations when the underlying circumstances no longer apply. Accordingly, we seek specific, pragmatic proposals that account for the technical, market, or other features that characterize IP-enabled services and that address the interrelationship between those features, the statutory text, and our policy goals.

A. Statutory Classifications

43. In this section, we examine the appropriate statutory classification for each category of IP-enabled services identified by commenters in response to section III, above. Although, as described below, we do not believe that particular statutory classifications will lead inexorably to any particular regulatory treatment, these classifications are nevertheless important to our analysis. We therefore seek comment regarding the appropriate legal classification of the various types of IP-enabled service identified. Which classes of IP-enabled services, if any, are "telecommunications services" under the Act? Which, if any, are "information services"? How, if at all, does our conclusion today that Pulver's Free World Dialup is an information service impact the classification of other IP-enabled services? We note that the Act specifically excepts from the "information service" category activities relating to the "management, control or operation of a telecommunications system or the management of a telecommunications

[141] 47 U.S.C. § 230 (stating federal policy "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").

[142] *See* 47 U.S.C. § 255 (requiring manufacturer of telecommunications equipment and providers of telecommunications services to ensure that equipment and services are designed to be usable by individuals with disabilities, if readily achievable); 47 U.S.C. § 615 note (stating federal policy to encourage and facilitate prompt deployment of a seamless, ubiquitous, and reliable end-to-end public "911" system); 47 U.S.C. § 1002(a) (requiring carriers to ensure that equipment, facilities and services are capable of providing authorized surveillance to law enforcement agencies); *see also* 47 U.S.C. 254(c)(1) (declaring importance of maintaining universal service, defined as "an evolving level of telecommunications services that the Commission shall establish periodically … taking into account advances in telecommunications and information technologies and services").

service."[143] How, if at all, does this exception apply to IP-enabled services? What effect, if any, do judicial decisions – including but not necessarily limited to those issued in *Brand X Internet Services v. FCC*[144] and *Vonage Holdings Corp. v. Minnesota Pub. Utils. Comm'n*[145] – have on the Commission's discretion to classify IP-enabled services? More broadly, how might statutory classifications rendered in this proceeding relate to the Commission's previous tentative conclusion that DSL-based Internet access service is an "information service"?[146] Where a commenter advocates treating a particular class of IP-enabled services as "telecommunications services" and another class as "information services," we ask that the commenter address specifically the reasons why the characteristics that differentiate or appear to make the two classes similar are relevant to the "telecommunications service"/"information service" distinction. Finally, we seek comment regarding whether new and evolving technologies and services raise the possibility that a single IP-enabled communications might comprise both an "information service" component and a "telecommunications service" component.

44. Where applicable, we also ask that commenters address the extent to which our previous interpretations of statutory terms are or are not suitable for proper classification of IP-enabled services. For example, Commission rules specify that the term "enhanced services" include those services that "employ computer processing applications that act on the . . . protocol . . . of the subscriber's transmitted information."[147] Should we continue to accord this specific distinction dispositive weight when classifying services? Are there other regulatory interpretations of the Act's "telecommunications service" and "information service" definitions – including, for example, those set forth in the *Stevens Report*[148] – that should be revisited at this time? Finally, are there legal constraints on the Commission's authority to revise its interpretation of these definitions, and if so, to what extent do such constraints preclude such revision?

---

[143] 47 U.S.C. § 153(20).

[144] 345 F.3d 1120 (9th Cir. 2003), *petitions for reh'g pending*.

[145] 290 F. Supp. 2d 993 (D. Minn. 2003), *appeal pending*.

[146] *See Wireline Broadband NPRM* at 3028, para. 16; *id.* at 3030, para. 20.

[147] *See, e.g.*, 47 C.F.R. § 64.702(a).

[148] *See Stevens Report*, 13 FCC Rcd at 11543-44, para. 88 (suggesting distinctions based on whether service (1) holds itself out as providing voice telephony or facsimile transmission service; (2) does not require the customer to use CPE different from that CPE necessary to place an ordinary touch-tone call (or facsimile transmission) over the public switched telephone network; (3) allows the customer to call telephone numbers assigned in accordance with the North American Numbering Plan, and associated international agreements; and (4) transmits customer information without net change in form or content).

B. Specific Regulatory Requirements and Benefits

45. We recognize that the nature of IP-enabled services may well render the rationales animating the regulatory regime that now governs communications services inapplicable here, and 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. We thus ask commenters to address how we might alter the regulatory treatment that might otherwise accompany the statutory classification they urge for various classes of IP-enabled service.

46. As mentioned above, Congress has provided the Commission with a host of statutory tools that together accord the Commission discretion in structuring an appropriate approach to IP-enabled services. Title II of the Communications Act governs the regulation of telecommunications services. Similarly, Title VI governs the regulation of cable services. Title I of the Act confers upon the Commission ancillary jurisdiction over matters that are not expressly within the scope of a specific statutory mandate but nevertheless necessary to the Commission's execution of its statutorily prescribed functions.[149] Section 1 of the Communications Act established the Commission "[f]or the purpose of regulating interstate and foreign commerce in communication by wire and radio,"[150] and section 4(i) authorized the Commission to "perform any and all acts, make such rules and regulations, and issue such orders, not inconsistent with this Act, as may be necessary in the execution of its functions."[151] Ancillary jurisdiction may be employed, in the Commission's discretion, where the Commission has subject matter jurisdiction over the communications at issue and the assertion of jurisdiction is reasonably required to perform an express statutory obligation.[152] "Because the Commission's judgment on how the public interest is best served is entitled to substantial deference, the Commission's choice of regulatory tools" when these conditions are met will stand "unless arbitrary or capricious."[153]

47. Second, with regard to telecommunications carriers and telecommunications services, the Commission is required to forbear from applying a particular regulation or statutory provision if it determines that: (1) enforcement of the regulation is not necessary to ensure that charges are just and reasonable, and are not unjustly or unreasonably discriminatory; (2) enforcement of the regulation is not necessary to protect consumers; and (3) forbearance is

---

[149] *See, e.g.*, *Computer & Communications Indus. Ass'n v. FCC*, 693 F.2d 198, 213 (D.C. Cir. 1982) (declaring Commission authority in this area "well settled").

[150] 47 U.S.C. § 151.

[151] 47 U.S.C. § 154(i).

[152] *See generally United States v. Southwestern Cable Co.*, 392 U.S. 157 (1968).

[153] *Computer & Communications Indus. Ass'n*, 693 F.2d at 213.

consistent with the public interest.[154] Use 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.

48. In light of the statutory prerogatives described above, we ask commenters to describe which particular regulatory requirements and entitlements, if any, should apply to each category of IP-enabled service.[155] In the sections that follow, we set forth particular requirements and benefits that may or may not apply to some or all IP-enabled services. How would the particular statutory classifications urged by the commenter for various IP-enabled services impact the applicability of each of the regulatory obligations and benefits described below? For each class of service and each requirement or benefit, is the result appropriate as a matter of public policy? Specifically, are there reasons why the purposes of this requirement or benefit are more or less relevant in the context of IP-enabled services than they are in the context of traditional telephony services? Would there be any technical, economic, or other impediments to carriers' compliance with the requirement or enjoyment of the benefit that are not present in other contexts in which it applies? What consequences might application of a particular requirement or benefit have on investment and other pertinent business decisions? What public interests should we consider, and how would a choice to apply, or not to apply, the particular requirement or benefit implicate those interests? Assuming *arguendo* that the obligation or benefit does apply to some or all IP-enabled services, we seek comment as to whether it should be applied differently in the context of those services, and whether we are authorized to apply it differently. Finally, to what extent, if any, could voluntary agreements entered into by IP-enabled service serve the purpose now served by regulation in the context of the legacy circuit-switched network?

49. To the extent commenters argue that the default regulatory framework associated with the legal classification accorded to a given service is inappropriate, we seek comment on whether the Commission should use its forbearance authority or Title I ancillary powers to modify that framework. We ask commenters who urge forbearance to address the specific section 10 criteria as they relate to the application of particular requirements or benefits to IP-enabled services generally or individual IP-enabled services in particular. Similarly, to the extent that commenters urge that we apply requirements or benefits in contexts outside the express scope of a relevant statutory provision pursuant to our Title I jurisdiction, we seek

[154] 47 U.S.C. § 160. Section 10(d) specifies, however, that "[e]xcept as provided in section 251(f), the Commission may not forbear from applying the requirements of section 251(c) or 271 under subsection (a) of this section until it determines that those requirements have been fully implemented." *See id.* § 160(d).

[155] For example, one might question what it would mean to apply E911 obligations on an Internet retailer, or to tariff an online newspaper offering. Similarly, some obligations may only be sensible in the context of VoIP service. However, to ensure that whatever distinctions we ultimately draw among different IP-enabled services are sound as a matter of law, technology, and public policy, we decline in this Notice to foreclose any particular approach, and therefore frame our questions in terms of all "IP-enabled services," though some may only apply to particular types of service.

comment on whether the assertion of jurisdiction is reasonably ancillary to the Commission's statutory responsibilities.[156]

1. Public Safety and Disability Access

a. Introduction

50. The Commission is charged with ensuring that radio and wire communications are comprehensively available to all in our nation, that they serve the interest of the national defense, promote the safety of life and property, and provide individuals with disabilities with equivalent access to such services in the public interest. In addition, the Wireless Communications and Public Safety Act of 1999 (911 Act) directs the Commission to "encourage and facilitate the prompt deployment of a seamless, ubiquitous, and reliable end-to-end infrastructure" for public safety communications, and establishes 911 as the national emergency number to enable all citizens to reach emergency services directly and efficiently, whether they use a wireless or wireline phone.[157] In this section, we seek comment on the public safety and disability access implications of IP technology and services.[158]

b. 911/E911 and Critical Infrastructure Deployment in IP-Enabled Services

51. Efforts by federal, state, and local government, along with the significant efforts by wireline and wireless service providers, have resulted in the nearly ubiquitous deployment of 911 service. While 911 service for wireline consumers has been in existence since 1965, wireless 911 service has been a requirement since 1996. The emergence of IP as a means of transmitting voice and data and providing other services via wireless, cable, and wireline communications has significant implications for meeting the nation's critical infrastructure and

---

[156] *See, e.g.*, *United States v. Midwest Video Corp.*, 406 U.S. 649, 661 (1972) (citing *Southwestern Cable Co.*, 392 U.S. at 175) (upholding Commission's exercise of its Title I powers to regulate community antenna television (CATV) when the growth of that service "threatened to deprive the public of the various benefits of [the] system of local broadcasting stations that the Commission was charged with developing and overseeing").

[157] 47 U.S.C. § 615 note (e); *see Wireless Communications and Public Safety Act of 1999*, Pub. L. No. 106-81, 113 Stat. 1286 (codified at 47 USC §§ 222, 251(e)) (911 Act). In enacting the 911 Act, Congress found that emerging technologies could be a critical component of such an end-to-end infrastructure.

[158] The Department of Justice has informed the Commission that it plans to file a petition for rulemaking asking the Commission to initiate a comprehensive rulemaking to address law enforcement's needs relative to CALEA. *See* 47 U.S.C. §§ 1000 *et seq.* The Commission recognizes the importance of ensuring that law enforcement's requirements are fully addressed. The Commission takes seriously the issues raised by law enforcement agencies concerning lawfully authorized wiretaps. Accordingly, the Commission plans to initiate a rulemaking proceeding in the near future to address the matters we anticipate will be raised by law enforcement, including the scope of services that are covered, who bears responsibility for compliance, the wiretap capabilities required by law enforcement, and acceptable compliance standards. This Notice does not prejudice the outcome of our proceeding on CALEA, and we will closely coordinate our efforts in these two dockets.

911 communications needs and for that reason we seek comment below on various aspects associated with determining the appropriate regulatory treatment for IP-enabled services.

52. Under the Commission's rules, there are two sets of requirements for 911. The first set, "basic 911," requires covered carriers to deliver all 911 calls to the appropriate public safety answering point (PSAP) or designated statewide default answering point.[159] Basic 911 service does not address what sort of information the PSAP should receive from that call; rather it seeks to ensure the delivery of 911 calls. The Commission, therefore, also adopted requirements for covered wireless carriers to be capable of delivering the calling party's call-back number and the calling party's location information.[160] These rules, referred to as the Commission's "enhanced 911" (E911) rules, are currently being phased in across the country and deployment of E911 capability is ongoing.[161]

53. Against this backdrop, we seek comment in this proceeding on the potential applicability of 911, E911, and related critical infrastructure regulation to VoIP and other IP-enabled services. As an initial matter, we have previously found in the *E911 Scope Order* that the Commission has statutory authority under Sections 1, 4(i), and 251(e)(3) of the Act to determine what entities should be subject to the Commission's 911 and E911 rules.[162] However, in deciding whether to exercise our regulatory authority in the context of IP-enabled services, we are mindful that development and deployment of these services is in its early stages, that these services are fast-changing and likely to evolve in ways that we cannot anticipate, and that imposition of regulatory mandates, particularly those that impose technical mandates, should be undertaken with caution. How should we weigh the potential public benefits of requiring

---

[159] *See* 47 C.F.R. §§ 20.18(b), 64.3001.

[160] *See Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, RM 8143, Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 18676, 18689-18722, paras. 24-91 (1996). Recognizing the challenges of implementation of E911 requirements, the Commission adopted a phased implementation plan for the covered carriers. Phase I implementation, which requires a covered carrier to transmit a 911 caller's call-back number and cell site to the appropriate PSAP, began on April 1, 1998. *See* 47 C.F.R. § 20.18(d). Phase II implementation, which requires a covered carrier to transmit a 911 caller's location information to the appropriate PSAP, began on October 1, 2001. *See* 47 C.F.R. § 20.18 (e), (h).

[161] *See* 47 C.F.R. § 20.18.

[162] *Revision of the Commission's Rules to Ensure Compatibility With Enhanced 911 Emergency Calling Systems; Amendment of Parts 2 and 25 to Implement the Global Mobile Personal Communications by Satellite (GMPCS) Memorandum of Understanding and Arrangements; Petition of the National Telecommunications and Information Administration to Amend Part 25 of the Commission's Rules to Establish Emissions Limits for Mobile and Portable Earth Stations Operating in the 1610-1660.5 MHz Band*, Docket Nos. CC Docket No. 94-102, IB Docket No. 99-67, *Report and Order and Second Further Notice of Proposed Rulemaking*, FCC 03-290 at paras. 13-15 (rel. Dec. 1, 2003) (*E911 Scope Order*). In the *E911 Scope Order*, the Commission found that it had authority under sections 1, 4(i), and 251(e)(3) of the Act, 47 U.S.C. §§ 151, 154(i), 251(e)(3), to determine whether the public interest required 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 such covered service should be subject to the Commission's 911/E911 requirements.

emergency calling and other public safety capabilities against the risk that regulation could slow technical and market development? We seek comment on whether the natural evolution of IP-enabled services over the course of the next few years will lead to technological improvements and cost savings in the transmittal of and response to emergency information, interoperability among public safety entities, and other elements of critical infrastructure needed to provide for public safety and homeland security in accordance with the Commission's statutory obligations and regulatory objectives. We recognize, too, that IP-enabled services may enhance the capabilities of PSAPs and first responders – and thus promote public safety – by providing information that cannot be conveyed by non-IP-enabled systems. Therefore, before we make any decision with respect to regulation, it is important that we develop a fuller understanding of the ways in which IP-enabled services or IP protocols can facilitate 911, E911, and critical infrastructure deployment and reduce attendant costs, both currently and in the future. We next ask commenters to address the technical and operational capabilities of current VoIP and other IP-enabled services to work with 911 service. We seek comment on whether IP-enabled services are technically and operationally capable of complying with the Commission's basic 911 service rules to ensure that calls are directed to the appropriate PSAP.[163] In particular, we seek comment on issues relating to the routing of IP-initiated 911 calls to PSAPs, and the potential for IP-enabled services to provide a viable and cost-effective alternative to the dedicated 911-trunking facilities in use today. Are there multiple technical methods by which VoIP providers could route calls? We also seek comment on ways in which current IP-enabled service providers seek to provide a similar service to their customers.

54. We also seek comment on whether VoIP and other IP-enabled services are technologically and operationally capable of delivering call-back and location information, enhanced 911 service, or to provide analogous functionalities that would meet the intent of the 911 Act and the Commission's regulations. We seek comment on whether there are multiple technical methods by which VoIP providers could provide call-back and location information? Are minimal technical requirements necessary, and what solutions can potentially provide them most effectively and efficiently? We note that the *Hatfield Report*,[164] which we commissioned in 2002 to provide an independent analysis of technical issues associated with the implementation of enhanced 911 services, examined IP technology as a potential solution to such issues. Moreover, some vendors of VoIP equipment claim to have resolved the technical problems associated with transmitting location and call-back to the appropriate PSAP through software upgrades.[165] To the extent that there is data on whether these software solutions meet or provide some functionality useful in meeting the Commission's E911 requirements, we request

---

[163] *See* 47 C.F.R. §§ 20.18(b), 64.3001.

[164] *See generally* Dale N. Hatfield, *A Report on Technical and Operational Issues Impacting the Provision of Wireless Enhanced 911 Services* <http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6513296239> (*Hatfield Report*).

[165] *See* Encore Networks, Inc., *Helping LECs Comply with Local Regulations for E911 Services* (visited Feb. 7, 2004) <http://www.fastcomm.com/zzs_e911.htm>.

commenters to provide such data. In addition to considering software-based solutions, are there other location solutions that equipment manufacturers could provide to enable a PSAP to identify the location of an IP-based 911 "caller"? Should the Commission distinguish between classes of IP-enabled service providers based on the method by which they provide these capabilities?

55. In the *E911 Scope* Order, we identified four criteria as relevant to determining whether particular entities should, in the public interest, be subject to some form of 911/E911 regulation: 1) the entity offers real-time, two-way switched voice service, interconnected with the public switched network, either on a stand-alone basis or packaged with other telecommunications services; 2) customers using the service or device have a reasonable expectation of access to 911 and enhanced 911 services; 3) the service competes with traditional CMRS or wireline local exchange service; and 4) it is technically and operationally feasible for the service or device to support E911.[166] We also stated that other factors could inform our decision as well.[167] We seek comment on whether there are IP-enabled services, and VoIP services in particular, that satisfy these four criteria. In view of the variety of IP-enabled services, and their very different functionalities, we also seek comment on whether these four criteria provide the appropriate analytical framework for determining whether and to what extent IP-enabled services should fall within the scope of our 911 and E911 regulatory framework. Should any of these criteria be modified, weighed differently, or replaced? Should alternative criteria be considered?

56. Assuming that we find IP-enabled services in general or certain services in particular to fall within our E911 "scope" criteria, we seek comment on how best to achieve our policy objectives for ensuring the availability of 911 and E911 capability. Should the Commission extend 911 and E911 requirements to such services, and if so, by what means and to what extent? We emphasize that we do not presume at this point that direct regulation would be required, and we specifically seek comment on the effectiveness of alternatives to direct regulation to achieve our public policy goals. For example, in December 2003, the National Emergency Number Association (NENA) and the Voice on the NET (VON) Coalition reached a voluntary agreement on approaches to provide VoIP subscribers with basic 911 service, and to work together to develop solutions that may lead to VoIP subscribers receiving enhanced 911 functionality.[168] We seek comment on the potential for similar agreements among public safety

[166] *See E911 Scope Order* at paras. 18-19.

[167] *Id.* at para. 19.

[168] *See* VON Coalition and NENA, *Public Safety and Internet Leaders Connect on 911*, Press Release (Dec. 1, 2003) (setting forth agreement for how two industry groups will work together as VoIP is deployed). Among other things, NENA and VON agreed that for "service to customers using phones that have the functionality and appearance of conventional telephones," 911 access would be provided within a reasonable period of three to six months, and "prior to that time [service providers would] inform customers of the lack of access." The agreement also stated that VoIP providers would work with local officials as the providers introduced their services into those local areas on ways to provide 911 access.

trade associations, commercial IP-stakeholders, consumers, and state and local E911 coordinators and administrators. To what extent can voluntary consensus, rather than regulation, spur deployment of IP-enabled E911 services? Should the Commission seek to facilitate voluntary, inclusive agreements similar to the NENA/VON agreement? Would promulgation of best practices or technical guidelines promote the provision of effective IP-based E911 services? If we conclude that mandatory requirements are necessary, how can we provide for technological flexibility so that our rules allow for the development of new and innovative technologies?

57. We also seek comment on the time frame in which we should consider 911 and E911 regulatory issues in the IP context. We note that the rapid growth, proliferation, and evolution of IP-enabled services and platforms, both now and in the future, may make timely regulatory assessment and response difficult. However, we recognize that the 911 Act establishes 911 as the national emergency number and requires the Commission to play an active role in promoting the deployment of a widespread network for public safety communications. Thus, we ask whether it may be appropriate to impose a requirement that some or all IP-enabled voice services provide 911 functionality to consumers and seek comment on this proposal. In light of the rapid pace of innovation in IP technology and services, and the potential for these innovations to yield future public safety benefits, we seek comment on whether consideration should be given to refraining from imposing E911 or related regulatory obligations on IP-enabled services until these services are better established and more widely adopted by consumers. At the same time, we seek to avoid a scenario in which a decision to impose E911 requirements at a future date would require costly and inefficient "retrofitting" of embedded IP infrastructure. Therefore, we seek comment on how best to balance these considerations. We also seek comment on how IP-enabled service providers, public safety entities, and other affected parties can best ensure that their forward planning in business and technology development allows for the possibility of future implementation of IP-enabled E911 services without the need for retrofitting.

c. Disability Access

58. We seek comment on how we should apply the disability accessibility requirements set forth in sections 255 and 251(a)(2) to any providers of VoIP or other IP-enabled services.[169] In September 1999, the Commission issued an order adopting rules to implement

[169] Section 255 requires a manufacturer of telecommunications equipment or CPE to ensure that such equipment is designed to be accessible to and usable by individuals with disabilities, if readily achievable, and requires a provider of a "telecommunications service" to ensure that its service is accessible to and usable by people with disabilities, if readily achievable. *See* 47 U.S.C. § 255. Where these goals are not readily achievable, section 255 requires that the equipment or service be made compatible with peripherals or specialized CPE commonly used to allow access to people with disabilities. *See* 47 U.S.C. § 255(d). Finally, section 251(a)(2) prohibits telecommunications carriers from installing network features, functions, or capabilities that do not comply with the guidelines and standards set forth in section 255. *See* 47 U.S.C. § 251(a)(2).

Section 255, adopting definitions from the Americans with Disabilities Act (ADA), defines the term "disability" to include "a physical or mental impairment that substantially limits one or more of the major life activities of such individual," "a record of such impairment," or the state of "being regarded as having such an (continued….)

sections 255 and 251(a)(2) (*Disability Access Order*),[170] which included a Notice of Inquiry regarding, among other things, section 255's applicability in the context of "Internet telephony" and "computer-based equipment that replicates telecommunications functionality."[171] We invite commenters here to refresh the record compiled in response to that Notice of Inquiry. We ask that commenters address the range of questions presented above in relation not only to the "IP telephony" services that were the focus of the prior Notice, but also with regard to the full range of other IP-enabled services at issue here. Specifically, do and should the rules established in the *Disability Access Order* apply in the context of VoIP or other IP-enabled services? We note specifically that in the *Disability Access Order*, the Commission relied on Title I to apply section 255 obligations to providers of voicemail and interactive menu services, both of which were deemed "information services."[172] Would that approach be appropriate with regard to any providers of VoIP or other IP-enabled services that we deem to be "information services"?

59. Section 225 of the Communications Act requires common carriers offering voice telephone service to also provide Telecommunications Relay Service (TRS) so that persons with disabilities will have equal access to the telecommunications network.[173] Beyond traditional TRS, which requires the use of a teletypewriter (TTY), the Commission has implemented this mandate by determining that two IP-enabled services, IP Relay and Video Relay Service (VRS), are forms of TRS.[174] In both scenarios, the Commission determined that TRS, as defined, was

(Continued from previous page)
impairment." *See* 42 U.S.C. § 12102(2)(A); *see also* 47 U.S.C. § 255(a)(1) (adopting ADA definition by reference). The Commission's regulations implementing section 255 specifically define "readily achievable," "usable," "accessible," and other pertinent terms. *See* 47 C.F.R. § 6.3.

[170] *See generally Disability Access Order*, 16 FCC Rcd 6417. Among other things, the Commission (1) required manufacturers and service providers to develop processes to evaluate the accessibility, usability, and compatibility of covered services and equipment, *see Disability Access Order*, 16 FCC Rcd at 6429-33, paras. 21-30; (2) required manufacturers and service providers to ensure that information and documentation provided in connection with equipment or service be accessible to people with disabilities, where readily achievable, and that employee training, where provided at all, account for accessibility requirements, *see id.*; (3) required the maximum feasible deployment of accessibility features that can be incorporated into product design, *see id.* at 6440-42, paras. 49-54; and (4) prohibited telecommunications carriers from installing network features, functions, or capabilities that do not comply with the accessibility requirements set forth elsewhere in the Order, *see id.* at 6435-37, paras. 37-42.

[171] *Id.* at 6483, para. 175; *see generally id.* at 6483-87, paras. 173-85.

[172] *See id.* at 6455-62, paras. 93-108.

[173] 47 U.S.C § 225. TRS enables an individual with a hearing or speech disability to communicate by telephone or other device with a hearing individual. This is accomplished through TRS facilities that are staffed by specially trained communications assistants (CAs) using special technology. The CA relays conversations between persons using various types of assistive communication devices and persons who do not require such assistive devices. *See generally Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities,* CC Docket No. 98-67, Report and Order and Further Notice of Proposed Rulemaking, 15 FCC Rcd 5140, para. 2 (2000) (*Improved TRS Order & FNPRM).*

[174] IP Relay functions in a similar manner to traditional TRS except that instead of a TTY, which is generally linked to the PSTN, the text is provided to, and received from, the communications assistant (CA) via the TRS consumer's computer or other Internet-enabled device. *See generally Provision of Improved Telecommunications*
(continued….)

not limited to "telecommunications" and that Congress intended the term "telephone transmission services" to be interpreted broadly to implement section 225's goal to "ensure that interstate and intrastate [TRS] are available, to the extent possible and in the most efficient manner, to hearing-impaired and speech-impaired individuals in the United States."[175] We seek comment on how these interpretations should inform our deliberations as we consider the appropriate classifications for IP-enabled services. We also note that current or future IP-enabled services may facilitate communications by individuals with disabilities more effectively than traditional technologies. To what extent, if any, will the advent of IP-enabled services improve traditional services designed to ensure access by persons with disabilities?

60. Relatedly, we seek comment on how migration to IP-enabled services will affect our statutory obligation to ensure that interstate and intrastate telecommunications relay services are available to hearing-impaired and speech-impaired individuals. Section 225 created a cost recovery mechanism whereby providers of eligible TRS services are compensated for the "reasonable costs" of providing interstate TRS[176] and required the Commission to prescribe regulations ensuring that those costs "be recovered from all subscribers for every interstate service and costs caused by intrastate telecommunications relay services shall be recovered from the intrastate jurisdiction."[177] We seek comment regarding how other decisions we make in this docket might affect contributions to the Interstate TRS Fund, and how, if at all, the Commission should amend its rules in light of the increasing use of IP-enabled services. We also seek comment on how any change in our TRS rules will affect the provision of intrastate TRS by the states.

2. Carrier Compensation

(Continued from previous page)
Relay Services and Speech-To-Speech Services for Individuals with Hearing and Speech Disabilities; *Petition for Clarification of WorldCom, Inc.*, CC Docket No. 98-67, Declaratory Ruling and Second Further Notice of Proposed Rulemaking, 17 FCC Rcd 7779 (2002) (*IP Relay Order*). TRS is a telecommunications relay service that allows persons with hearing or speech disabilities who use sign language to communicate with the CA in sign language (rather than by text) through video equipment. A video link allows the CA to view and interpret the party's signed conversation (and vice versa), and then relay the conversation back and forth with the other party to the call (the voice caller). In almost all cases, the video link is provided over the Internet. *See Improved TRS Order & FNPRM*, 15 FCC Rcd at 5152-54, paras. 21-27.

[175] *IP Relay Order*, 17 FCC Rcd at 7783, para. 10.

[176] *See* 47 U.S.C. § 225(d)(3); 47 C.F.R. § 64.604(c)(5)(iii)(E).

[177] 47 U.S.C. § 225(d)(3). Under our existing rules, every carrier providing interstate telecommunications services must contribute to the Interstate TRS Fund on the basis of end-user telecommunications revenues. *See* 47 C.F.R. § 64.604(c)(5)(iii)(A).

61. The Commission seeks comment on the extent to which access charges[178] should apply to VoIP or other IP-enabled services.[179] If providers of these services are not classified as interexchange carriers, or these services are not classified as telecommunications services, should providers nevertheless pay for use of the LECs' switching facilities? 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. Given this, under what authority could the Commission require payment for these services? If charges should be assessed on these services, should they be the same as the access charges assessed on providers of telecommunications services, or should the charges be computed and assessed differently? How should different charges be computed and assessed? By seeking comment on whether access charges should apply to the various categories of service identified by the commenters, we are not addressing whether charges apply or do not apply under existing law.[180]

62. If, on the other hand, VoIP or other IP-enabled services are classified as telecommunications services, should the Commission forbear from applying access charges to these services, or impose access charges different from those paid by non-IP-enabled telecommunications service providers? If so, how should different charges be computed and assessed? If commenters believe charges should be assessed, must carriers pay access charges,

---

[178] Section 69.5(b) of the Commission's rules states that "[c]arrier's carrier charges shall be computed and assessed upon all interexchange carriers that use local exchange switching facilities for the provision of interstate or foreign telecommunications services." 47 C.F.R. § 69.5. To keep local telephone rates low, access charges traditionally have exceeded the forward-looking economic costs of providing access services. *See Intercarrier Compensation NPRM*, 16 FCC Rcd at 9614, para. 7 (citing *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, 12 FCC Rcd 8776 (1997) (*First Universal Service Report and Order*)).

[179] Since 1983 the Commission has exempted enhanced service providers (ESPs) from the payment of certain interstate access charges (the "ESP exemption"). *See Implementation of the Local Competition Provisions in the Telecommunications Act of 1996; Intercarrier Compensation for ISP-Bound Traffic*, CC Docket Nos. 96-98, 99-68, Order on Remand and Report and Order, 16 FCC Rcd 9151, 9158, para. 11 (2001) (*ISP Remand Order*) (citing *MTS/WATS Market Structure Order*, 97 FCC 2d at 715, para. 83); *see also ESP Exemption Order*, 3 FCC Rcd at 2633, para. 17; *Access Charge Reform*, CC Docket Nos. 96-262, 94-1, 91-213, 95-72, First Report and Order, 12 FCC Rcd 15982, 16133, para. 344 (1997) (*Access Charge Reform First Report and Order*). Consequently, ESPs are treated as end users for the purpose of applying access charges and are, therefore, entitled to pay local business rates for their connections to the LEC central offices and the PSTN. *See ISP Remand Order*, 16 FCC Rcd at 9158, para. 11 (citing *ESP Exemption Order*, 3 FCC Rcd at 2635 n.8, 2637 n.53); *see also Access Charge Reform First Report and Order*, 12 FCC Rcd at 16133-35, paras. 344-48.

[180] Thus, we expressly preserve the Commission's flexibility to address one or all of the petitions discussed above by issuing a declaratory ruling or rulings before the culmination of the instant proceeding. We also expressly preserve the Commission's flexibility to address the *Intercarrier Compensation* and *Universal Service* proceedings currently pending before the Commission before the culmination of the instant proceeding. *See Intercarrier Compensation NPRM*, 16 FCC Rcd 9610 (2001); *Universal Service Further NPRM*, 17 FCC Rcd 24952 (2002).

or should they instead pay compensation under section 251(b)(5) of the Act?[181] Would assessment of rates lower than access charge rates require increases in universal service support or end-user charges? If no access charges, or different charges, are assessed for VoIP and IP-enabled service providers' use of the PSTN, would identification of this traffic result in significant additional incremental costs?

3. Universal Service

63. We seek comment on how the regulatory classification of IP-enabled services, including VoIP, would affect the Commission's ability to fund universal service. Many of these issues have already been raised in the *Wireline Broadband NPRM*, and we encourage parties to incorporate into this docket prior filings in that proceeding that are relevant to our inquiry here. In the *Wireline Broadband NPRM*, the Commission sought comment on whether facilities-based broadband Internet access providers are required to contribute, pursuant to its mandatory authority,[182] or should be required to contribute to universal service, pursuant to its permissive authority.[183] In this proceeding, we broaden that inquiry by asking commenters to address the contribution obligations of both facilities-based and non-facilities-based providers of IP-enabled services. These questions are also intertwined with issues raised in our separate *Universal Service Contribution Methodology* proceeding, which explores possible ways to reform our current methodology for assessing universal service contributions.[184] We leave questions of whether to reform the current methodology to the separate *Universal Service Contribution Methodology* proceeding.

64. If certain classes of IP-enabled services are determined to be information services, could or should the Commission require *non*-facilities-based providers of such services to

[181] Section 251(b)(5) requires LECs to "establish reciprocal compensation arrangements for the transport and termination of telecommunications." 47 U.S.C. § 251(b)(5).

[182] *See* 47 U.S.C. § 254(d). Section 254(d) states that "[e]very telecommunications carrier that provides interstate telecommunications services *shall* contribute" to universal service. This section is often referred to as the Commission's mandatory contribution authority.

[183] *Wireline Broadband NPRM*, 17 FCC Rcd at 3053, para. 74; *see also Stevens Report,* 13 FCC Rcd at 11570, para. 139; 47 U.S.C. § 254(d). Section 254(d) states that "[a]ny other provider of interstate telecommunications may be required to contribute … if the public interest so requires." This section is often referred to as the Commission's permissive contribution authority.

[184] *See Federal-State Joint Board on Universal Service, 1998 Biennial Regulatory Review – Streamlined Contributor Reporting Requirements Associated with Administration of Telecommunications Relay Service, North American Numbering Plan, Local Number Portability, and Universal Service Support Mechanisms, Telecommunications Services for Individuals with Hearing and Speech Disabilities, and the Americans with Disabilities Act of 1990, Administration of the North American Numbering Plan and North American Numbering Plan Cost Recovery Contribution Factor and Fund Size, Number Resource Optimization, Telephone Number Portability, Truth-in-Billing and Billing Format*, CC Docket Nos. 96-45, 98-171, 90-571, 92-237, 99-200, 95-116, 98-170, Report and Order and Second Further Notice of Proposed Rulemaking, 17 FCC Rcd 24952, 24984-24998, paras. 66-100 (2002).

contribute to universal service pursuant to its permissive authority? Would such providers "provide" telecommunications? If the Commission were to exercise its permissive authority over facilities-based and non-facilities-based providers of IP-enabled services, how could it do so in an equitable and nondiscriminatory fashion? Would the Commission identify specific services that are subject to its permissive authority? How would providers of IP-enabled services identify the portion of their IP-enabled service revenues that constitute end-user telecommunications revenues? If certain IP-enabled services are information services, the Commission has determined that such services would be subject to federal jurisdiction. Which entity is providing telecommunications in this instance and how can we identify the interstate revenues, if any, associated with the provision of such telecommunications? If the Commission determines that other IP-enabled services are not information services, how would providers of such services identify their interstate and international telecommunications revenues? If IP-enabled services are not subject to contributions, what would be the magnitude of the forgone contribution revenues over the next five years? Does the advent of IP-enabled services weigh in favor of any specific reforms currently under consideration in our *Universal Service Contribution Methodology* proceeding?[185] For example, under a telephone number-based methodology, VoIP providers that utilize telephone numbers would be subject to assessment. Under a connections-based methodology, providers of broadband connections used to provide VoIP could be subject to assessment.

65. In addition to considering the impact of our classification decision on funding the universal service support mechanisms, the Commission must also evaluate how the regulatory classification of IP-enabled services would affect the Commission's universal service support mechanisms.[186] Previously, the Commission concluded that the generic universal service definition in section 254(c)(1) is "explicitly limited to telecommunications services."[187] At the same time, the Commission found that the statute provided the authority to support a broader

[185] *Id.*

[186] Universal service programs consist of support to subsidize loop costs, and, in some cases, switching costs of eligible carriers servicing high-cost areas, and Lifeline/Link Up, which provides support to low-income consumers for telephone service and installation. Section 254 of the Act codified the Commission's historical commitment to universal service, directing the Commission to establish policies to preserve and advance universal service. The "core" services that are currently supported by universal service include: single-party service; voice grade access to the public switched network; DTMF signaling or its functional equivalent; access to emergency services; access to operator services; access to interexchange services; access to directory assistance; and toll limitation services for qualifying low-income consumers. *See* 47 C.F.R. § 54.101. Section 254 also directed the Commission to create mechanisms to enhance access to advanced telecommunications and information services for schools, libraries and rural health care providers, respectively. Currently, the schools and libraries mechanism provides support for telecommunications services, internet access, and internal connections, while the rural healthcare mechanism provides support for telecommunications services and internet access. All of these mechanisms are referred to collectively as "universal service."

[187] *First Universal Service Report and Order*, 12 FCC Rcd at 9009, para. 437.

class of services, including Internet access, an information service, for schools and libraries.[188] If IP-enabled services, or specific classes of services, are information services, would the Commission need to revisit its interpretation of section 254(c)(1) in order to include such services in the list of supported services?[189] We seek specific comment on how the regulatory classification of IP-enabled services would impact each of the current universal service support mechanisms – high cost, low income, schools and libraries, and rural health care programs – and whether any rule changes are necessary in light of our ultimate classification decision. We also seek comment on whether the advent of VoIP or other IP-enabled services requires any modifications to our rules to fulfill the requirements of section 254(e) and 254(k).[190] In particular, how can the Commission ensure that services supported by universal service bear no more than a reasonable portion of the costs associated with facilities that are used to provide both supported services and unsupported services?

66. We seek comment more broadly on how potential migration to IP-enabled services will affect our statutory obligations to support and advance universal service.[191] Commenters should describe whether migration to IP-enabled services might lessen eligible telecommunications carriers' (ETCs) ability to maintain existing circuit-switched networks and deploy new packet-switched networks. In some instances, IP-enabled providers reach end-user customers using loops that are currently supported by universal service. To what extent would classification of IP-enabled services, or specific classes of such services, as information services affect the eligibility of rural and non-rural ETCs for high cost support? Will migration to IP-enabled services lower or raise the cost of providing service on the public switched network or IP-enabled platforms? We fully recognize that many IP-enabled services are delivered over network infrastructure that traditionally has been supported by universal service. We seek to

---

[188] *Id.*; *see also* 47 U.S.C. § 254(c)(3), (h)(1)(B). The U.S. Court of Appeals for the Fifth Circuit upheld the Commission's determination that it had the authority to support non-telecommunications services for schools and libraries. *See Texas Office of Pub. Util. Counsel v. FCC*, 183 F.3d at 439-43.

[189] Even though advanced services are not directly supported by federal universal service, "[Commission] policies do not impede the deployment of modern plant capable of providing access to advanced services." *Federal-State Joint Board on Universal Service, Multi-Association Group (MAG) Plan for Regulation of Interstate Services of Non-Price Cap Incumbent Local Exchange Carriers and Interexchange Carriers,* CC Docket Nos. 96-45, 00-256, Fourteenth Report and Order, Twenty Second Order on Reconsideration, 16 FCC Rcd 11244, 1322, paras. 199-200 (2001) ("*Fourteenth Report and Order*"), *recon. pending* ("The public switched telephone network is not a single-use network. Modern network infrastructure can provide access not only to voice services, but also to data, graphics, video, and other services."); *see also Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Order and Order on Reconsideration, 18 FCC Rcd 15090, 15095, para. 13 (2003) (describing "no barriers" policy).

[190] Section 254(e) states that support shall only be used for the provision, maintenance, and upgrading of facilities and services for which the support is intended. 47 U.S.C. § 254(e). Section 254(k) also requires that services supported by universal service bear no more than a reasonable share of the joint and common costs of the facilities used to provide these services. 47 U.S.C. § 254(k).

[191] 47 U.S.C. § 254(b).

develop a record on whether there is a fundamental need to reexamine our universal service paradigm if consumers increasingly are utilizing other platforms, unsupported by universal service funds, to fulfill their communications needs.

4. Title III

67. As noted above, IP-enabled services can be provided over any broadband platform, including a wireless platform, and there are numerous examples of wireless providers offering such services. IP-enabled services may also involve the use of wireless technology in combination with other platforms, *e.g.*, a VoIP call may originate from a mobile device and terminate on a wireline or cable platform. To the extent that providers of IP-enabled services use wireless technology to deliver such services, they fall within the ambit of Title III of the Act, which provides the structure for the Commission's regulation of spectrum-based services, including broadcasting and all other services that use radio waves.[192] Moreover, within Title III, Section 332 provides a specific framework for regulation of commercial mobile radio service (CMRS) providers.[193] Section 332 provides that CMRS providers are common carriers subject to the provisions of Title II, but it also authorizes the Commission to forbear from applying Title II provisions it determines are inapplicable.[194] Accordingly, in implementing Section 332, the Commission has forborne from applying most Title II economic regulation to CMRS providers based on the competitive nature of the CMRS marketplace.[195] In addition, Section 332 limits state regulation of CMRS by preempting states from regulating the entry of or rates charged by CMRS providers.[196]

68. In light of this statutory framework and history of forbearance, we seek comment on what effect Title III may have on the provision or regulation of IP-enabled services provided over, in whole or in part, a wireless platform. Does Title III require us to treat such services differently from other IP-enabled services? We note that Title III does not expressly identify or distinguish wireless services based on whether they are IP-enabled. Does Title III apply to IP-enabled wireless services and other wireless services in the same way? We also note that most of our rules governing the licensing and operation of wireless services, particularly commercial services, are technology-neutral except to the extent necessary to prevent interference among competing spectrum uses. We thus seek comment on whether the Commission should make any distinctions among wireless providers of IP-enabled services based on the nature of their spectrum use (*e.g.*, fixed/mobile, licensed/unlicensed).

---

192 *See Title III – Provisions Relating to Radio*, 47 U.S.C. §§ 301 *et seq.*

193 47 U.S.C. § 332.

194 47 U.S.C. § 332(c)(1).

195 *See generally CMRS Second Report and Order*, 9 FCC Rcd 1411.

196 47 U.S.C. § 332(c)(3).

69. We also seek comment on the impact of Section 332 on IP-enabled services offered by CMRS providers. Section 332(c)(1) provides that CMRS providers are common carriers subject to the provisions of Title II, but it also gives the Commission authority to limit Title II regulation of CMRS.[197] Accordingly, in implementing Section 332, the Commission has refrained from applying most Title II economic regulation to CMRS providers based on the competitive nature of the CMRS marketplace.[198] In addition, Section 332(c)(3) preempts states from regulating the entry of or rates charged by CMRS providers.[199] Thus, to the extent that CMRS providers offer VoIP or other IP-enabled CMRS services that we classify as subject to Title II, we believe that the statutory provisions of Section 332 apply, *i.e.*, states are preempted from regulating entry or rates of such services, and the Commission may limit their regulation under Title II. We seek comment on this analysis. We also seek comment on whether there is any reason that the Commission's existing deregulatory policies with respect to Title II regulation of CMRS should not apply uniformly to IP-enabled CMRS as well as other CMRS.

5. Title VI

70. IP-enabled services, such as VoIP, also can be – and often are – provided over cable facilities. What impact, if any, should the provision of broadband over cable plant have on the Commission's treatment of IP-enabled services? What effect, if any, does Title VI of the Act have on any potential regulation of cable-based IP-enabled services?[200] If the Commission determines that IP-enabled services, or any particular class of IP-enabled services, are telecommunications services, should the Commission forbear from applying certain Title II provisions to cable providers' offering IP-enabled services? Alternatively, if the Commission determines that some or all IP-enabled services constitute information services, could the Commission use its ancillary jurisdiction to apply any Title II-like obligation to any cable providers of IP-enabled services? If so, what is the basis for an exercise of that authority? Finally, is any class of IP-enabled services properly classified under the Act as "cable

---

[197] Section 332(c)(1) of the Act provides that the Commission may specify any provision of Title II, other than Sections 201, 202, and 208, as inapplicable to CMRS providers if it finds certain criteria specified by the statute to have been met. 47 U.S.C. § 332(c)(1). Since this provision was adopted, the Commission has obtained broader forbearance authority with respect to all telecommunications providers under Section 10 of the Act. 47 U.S.C. § 160.

[198] *See generally CMRS Second Report and Order*, 9 FCC Rcd 1411.

[199] 47 U.S.C. § 332(c)(3). States may petition the Commission for authority to regulate CMRS rates based on certain statutory criteria, but no state has been granted such authority to date.

[200] *See* 47 U.S.C. §§ 521 *et seq.*; 47 C.F.R. §§ 76.1 *et seq.* For example, Title VI and our implementing rules govern the video programming that a cable operator must carry, *see* 47 U.S.C. §§ 534, 536, 531; establish rules that prevent a cable operator from unfairly withholding affiliated video programming from other cable operators and satellite broadcast providers, *see* 47 U.S.C. § 548; establish horizontal cable ownership limits, *see* 47 U.S.C. § 533(f)(1); and establish and limit the authority for local franchises to regulate cable operators, *see* 47 U.S.C. §§ 541 *et seq.*

service"?[201] If so, what regulatory requirements, if any, would apply to those services? Specifically, should any class of VoIP or other IP-enabled service be construed to be a "cable service" for franchising purposes?[202] In responding to these questions, we ask commenters to explain whether the Commission should make any distinction among categories of cable providers for regulatory purposes.

VI. OTHER REGULATORY REQUIREMENTS

A. Consumer Protection

71. In this section, we seek comment on whether it is necessary to extend the customer proprietary network information (CPNI) requirements and other consumer protections afforded in the Act to subscribers of VoIP or other IP-enabled services. First, section 222 of the Act restricts telecommunications carriers' use and disclosure of CPNI.[203] In section 222, Congress recognized both that telecommunications carriers are in a unique position to collect sensitive personal information and that customers maintain an important privacy interest in protecting this information from disclosure and dissemination. We seek comment on whether the CPNI requirements should apply to any provider of VoIP or other IP-enabled services.

72. Second, we seek comment regarding a number of other consumer protections set forth in the Act and Commission rules. For example, section 214 of the Act requires common carriers to obtain Commission authorization before constructing, acquiring, operating or engaging in transmission over lines of communications, or discontinuing, reducing or impairing

---

[201] The term "cable service" means

> (A) the one-way transmission to subscribers of (i) video programming, or (ii) other programming service, and (B) subscriber interaction, if any, which is required for the selection or use of such video programming or other programming service.

47 U.S.C. § 522(6). "Video programming" means "programming provided by, or generally considered comparable to programming provided by, a television broadcast station." 47 U.S.C. § 522(20). "Other programming service" means "information that a cable operator makes available to all subscribers generally." 47 U.S.C. § 522(14). The term "interactive on-demand service" means "a service providing video programming to subscribers over switched networks on an on-demand, point-to-point basis, but does not include services providing video programming prescheduled by the programming providers." 47 U.S.C. § 522(12).

[202] *See* 47 U.S.C. § 522(6)(A), (14).

[203] 47 U.S.C. § 222. CPNI is defined to include "(A) information that relates to the quantity, technical configuration, type, destination, location, and amount of use of a telecommunications service subscribed to by any customer of a telecommunications carrier, and that is made available to the carrier by the customer solely by virtue of the carrier-customer relationship; and (B) information contained in the bills pertaining to telephone exchange service or telephone toll service received by a customer of a carrier." 47 U.S.C. § 222(h)(1).

telecommunications service to a community.[204] Section 258 of the Act prohibits "slamming" by requiring that any "telecommunications carrier" must adhere to authorization and verification procedures prescribed by the Commission when submitting and executing carrier changes.[205] Violators are liable to the subscriber's properly authorized carrier for all charges collected.[206] Moreover, under sections 201 and 258 of the Act, the Commission has adopted "Truth-in-Billing" rules to improve consumers' understanding of their telephone bills.[207] Finally, the Commission has adopted rules pursuant to section 226 of the Act[208] to ensure that customers are able to reach their preferred long distance carriers from public telephones and receive sufficient information about the rates they will pay for operator services at public phones and aggregator locations such as hotels, hospitals, and educational institutions.[209] We seek comment on whether these billing-related requirements – or any other consumer protections not discussed here[210] – should apply to any providers of VoIP or other IP-enabled services.

B. Economic Regulation

73. We also seek comment on whether various traditional economic regulations set forth in Title II and Commission rules should be applied to any class of IP-enabled service provider. Among other things, Title II requires all common carriers of interstate or foreign communications by wire or radio to provide those communications upon reasonable request at rates, classifications, and practices that are just and reasonable;[211] prohibits common carriers

---

[204] 47 U.S.C. § 214. *See, e.g.*, *Verizon Telephone Companies Section 63.71 Application to Discontinue Expanded Interconnection Service Through Physical Collocation*, WC Docket No. 02-237, Order, 18 FCC Rcd 22737, 22742, para. 8 (2003) (applying five factors to determine whether "reasonable substitutes are available" to consumers).

[205] 47 U.S.C. § 258(a).

[206] 47 U.S.C. § 258(b); *see also* 47 C.F.R. § 64.1170.

[207] *See* 47 C.F.R. §§ 64.2400-64.2401. Among other things, a telephone bill must: (1) be accompanied by a brief, clear, non-misleading, plain language description of the service or services rendered; (2) identify the service provider associated with each charge; (3) clearly and conspicuously identify any change in service provider; (4) identify those charges for which non-payment will not result in disconnection of the customer's basic local service; and (5) provide at least one toll-free number for customers to call to inquire or dispute any charges on the bill. The Commission also determined that carriers should use standard labels on bills when referring to line item charges relating to federal regulatory action, such as universal service fees, subscriber line charges, and local number portability charges. *See Truth-in-Billing and Billing Format*, CC Docket No. 98-170, Report and Order and Further Notice of Proposed Rulemaking, 14 FCC Rcd 7492, 7503, 7523, paras. 21, 50 (1999), *reconsideration granted in part*, Order on Reconsideration, 15 FCC Rcd 6023 (2000), Errata, 15 FCC Rcd 16544 (Com. Car. Bur. 2000).

[208] 47 U.S.C. § 226. Section 226 is also referred to as the "Telephone Operator Consumer Services Improvement Act" (TOCSIA). *See* 47 U.S.C. § 226(a)(2) (defining "aggregator"), (a)(9) (defining "provider of operator services").

[209] *See* 47 C.F.R. §§ 64.703-64.710.

[210] *See, e.g.*, 47 U.S.C. § 223 (prohibiting obscene or harassing telephone calls); 47 U.S.C. § 228 (regulating pay-per-call services).

[211] 47 U.S.C. § 201. Section 201 also is the basis for the Commission's authority to impose access charges on interexchange carriers. *See generally infra* Section V.B.2. In addition, pursuant to section 201, U.S. carriers are (continued….)

from unjustly or unreasonably discriminating in "charges, practices, classifications, regulations, facilities, or services" against similarly situated third-party customers;[212] and requires providers of telecommunications service to interconnect directly or indirectly with the facilities and equipment of other such providers.[213] Further, the Act imposes additional requirements upon LECs, including, for example, the obligation to provide number portability.[214] The Act also entitles providers of telecommunications services to use certain incumbent LEC network elements on an unbundled basis and at cost-based rates.[215] Finally, under the Commission's *Computer Inquiry* decisions,[216] "facilities-based common carriers" are required to provide the basic transmission services underlying their enhanced services on a nondiscriminatory basis pursuant to tariffs.[217]

74. While several of the regulatory obligations discussed in previous sections of this Notice may have general applicability to any entity that seeks to offer voice services, many of the "economic" regulations set forth here have been written to apply specifically to cases

(Continued from previous page)
required to make international settlement payments to terminate international traffic unless they are exempted from such payments on certain routes or receive a waiver.

[212] 47 U.S.C. § 202.

[213] 47 U.S.C. § 251(a)(1); *see also, e.g.*, 47 U.S.C §§ 203(a) (requiring common carriers to file with the Commission tariffs for interstate and international wire and radio communications).

[214] *See* 47 U.S.C. § 251(b) (requiring those telecommunications carriers classified as LECs to offer services for resale; to provide number portability; to offer dialing parity; to provide access to rights-of-way; and to "enter into reciprocal compensation arrangements for the transport and termination of telecommunications").

[215] *See* 47 U.S.C. § 251(c)(3); *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers; Implementation of Local Competition Provisions of the Telecommunications Act of 1996*; *Deployment of Wireline Services Offering Advanced Telecommunications Capability*, CC Docket Nos. 01-338, 96-98, 98-147, Report and Order and Further Notice of Proposed Rulemaking, 18 FCC Rcd 16978 (2003) (*Triennial Review Order*), *corrected by* Errata, 18 FCC Rcd 19020 (2003), *petitions for review pending*, *United States Telecom Ass'n v. FCC*, D.C. Cir. No. 00-1012 (and consolidated cases).

[216] *See Wireline Broadband NPRM*, 17 FCC Rcd at 3036-40, paras. 33-42 (providing detailed summary of the history and requirements of the *Computer Inquiry* regime).

[217] *See Computer II Final Order*, 77 FCC 2d at 415-16, para. 83. BOCs have more specific obligations under the *Computer Inquiry* regime, through either "comparably efficient interconnection" (CEI) or "open network architecture" (ONA). *See generally Computer III Phase I Order*, 104 FCC 2d at 1039-42, paras. 155-165 (describing ONA requirements); *id.* at 1064, para. 214 (describing CEI requirements).

We note that the Commission has proceedings pending before it concerning whether it should modify or eliminate the *Computer Inquiry* rules as they apply to wireline facilities. *See, e.g.*, *Wireline Broadband NPRM*, 17 FCC Rcd 3019; *Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services; 1998 Biennial Regulatory Review of Computer III and ONA Safeguards and Requirements*, CC Docket Nos. 95-20, 98-10, Further Notice of Proposed Rulemaking, 13 FCC Rcd 6040 (1998). We do not seek to review those issues in this Notice. Rather, our request for comment is limited to the application of those rules to IP-enabled services, as we have defined that term above.

involving a monopoly service provider using its bottleneck facilities to provide services to a public that is without significant power to negotiate the rates, terms, and conditions of those services. With the advent of competition in markets for telecommunications services, the Commission has tailored the application of these requirements, reserving application of the most stringent for carriers considered "dominant."[218] As a threshold matter, therefore, we seek comment on whether any of these economic regulations are appropriate in the context of IP-enabled services, given that customers often can obtain these services from multiple, intermodal, facilities- and non-facilities-based service providers.[219] Specifically, we seek comment on (1) what regulations, if any, would apply to each class of IP-enabled services, given the legal classification urged for that class; (2) whether, for services classified as "telecommunications services," we should use our forbearance authority to remove a particular obligation or entitlement;[220] and (3) whether, for services classified as "information services," we should exercise our ancillary jurisdiction to impose a particular obligation or entitlement. In answering these questions, we ask that commenters specifically address the market conditions that form the rationale for economic regulation in the context of the legacy network, and the extent, if any, to which the market for IP-enabled services calls for application of similar regulation.

C. Rural Considerations

75. We note that this Commission has repeatedly recognized the unique challenges facing rural carriers.[221] Because rural carriers generally have higher operating and equipment costs, which are attributable to lower subscriber density, small exchanges, and a lack of

[218] It has been the Commission's policy to detariff non-dominant carriers in order foster competition in the market for interstate, domestic, interexchange telecommunications services by subjecting these carriers to "the same incentives and rewards that firms in other competitive markets confront." *Policy and Rules Concerning the Interstate, Interexchange Marketplace*, CC Docket No. 96-61, Second Report and Order, 11 FCC Rcd 20730, 20732-33, paras. 3-4 (1996). By contrast, the Commission continues to treat incumbent LECs as dominant carriers and, absent a specific finding to the contrary for a particular market, these carriers remain subject to tariff filings, tariff support and pricing requirements. *See, e.g.*, *Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services*, CC Docket No. 01-337, Notice of Proposed Rulemaking, 16 FCC Rcd 22745, 22747-48, para. 5 (2001) (*Incumbent LEC Broadband NPRM*). In addition, in the Commission's *Competitive Carrier* proceeding, the Commission removed many of the section 214 obligations imposed on non-dominant carriers. *See id.* at 22751-52, para. 9.

[219] For example, we note that the Commission has exercised its forbearance authority several times with respect to CMRS providers because it determined that consumers have competitive choices available to them. *See, e.g.*, *CMRS Second Report and Order*, 9 FCC Rcd 1411 (declining to apply the requirements contained in sections 203, 204, 205, 211, and 214 of the Act to CMRS providers); *see also* 47 C.F.R. § 20.15. As noted above, the D.C. Circuit has recently affirmed the Commission's approach. *See supra* note 123 (citing *Orloff v. FCC,* 352 F.3d 415).

[220] We note that section 10(d) prohibits the Commission from forbearing from the application of section 251(c) unless it determines that the latter provision has been "fully implemented." *See* 47 U.S.C. § 160(d). To the extent commenters urge forbearance from application of that subsection, we ask that they address this section 10(d) limitation.

[221] *See, e.g.*, *Fourteenth Report and Order*, 16 FCC Rcd at 11302, para. 145.

economies of scale, the Commission has historically not adopted one-size-fits-all policies that might impede rather than support the provision of affordable service by rural carriers.[222] We have sought comment, above, on the implications of our decisions in this docket for the universal service support mechanisms, including our high cost fund. In addition, we note that rural incumbent LECs derive a significant portion of their revenues from access charges. How might the jurisdictional analysis, set out above, affect the level of intrastate access charges that these carriers receive? We invite commenters to address whether our policies for IP-enabled services have other implications for rural communities and the providers which serve them.

D. Other Considerations

76. Finally, we seek comment on other implications of our decisions in this docket. First, we seek comment on the potential international implications raised by the use IP-enabled services, such as the potential impact on international settlement rates[223] and the ability of consumers to take their IP CPE overseas and continue to make and receive calls.[224] We also ask parties to comment on whether the growing use of IP-enabled services presents any foreign policy or trade issues.[225] Further, we seek comment whether any action relating to numbering resources is desirable to facilitate or at least not impede the growth of IP-enabled services, while at the same time continuing to maximize the use and life of numbering resources in the North American Numbering Plan.[226]

---

[222] *Id.*

[223] *See International Settlements Policy Reform; International Settlement Rates*, IB Docket Nos. 02-324, 96-261, 17 FCC Rcd 19954, 19961, para. 7 (2002) (citing *International Settlement Rates*, IB Docket No. 96-261, Report and Order, 12 FCC Rcd 19806, 19904-05, para. 216 (1997); Report and Order on Reconsideration and Order Lifting Stay, 14 FCC Rcd 9256 (1999), *aff'd sub nom. Cable & Wireless P.L.C. v. FCC*, 166 F.3d 1224 (D.C. Cir. 1999)).

[224] *See* Dan Gillmor, *Internet Calls to Challenge Phone Companies*, San Jose Mercury News, Jun. 8, 2003, at 2003 WL 19867191 (describing consumers in Japan using a telephone number assigned to area code 415, which is assigned to California); Kripa Raman, *UK Phone Numbers On Offer Here*, The Hindu Business Line, at 2003 WL 66051291 (reporting that United Kingdom company offers phone numbers assigned to the U.K. in India).

[225] Currently, the Commission requires common carriers to obtain section 214 authorization to provide United States-international service. *See* 47 C.F.R. §§ 63.12, 63.18. This authorization process provides the Executive Branch an opportunity to review applications for national security, law enforcement, foreign policy, and trade issues prior to the carrier initiating international service. *See Rules and Policies on Foreign Participation in the U.S. Telecommunications Market*, IB Docket Nos. 97-142, 95-22, Report and Order and Order on Reconsideration, 12 FCC Rcd 23891, 23919-21, paras. 61-66 (1997) (explaining that the Commission accords deference to the expertise of the Executive Branch regarding issues of national security, law enforcement, foreign policy, and trade policy related to an international section 214 application), Order on Reconsideration, 15 FCC Rcd 18158 (2000).

[226] The impact of IP-enabled services on numbering resources has been raised by members of the North American Numbering Council (NANC), our federal advisory committee on numbering issues, at a number of recent NANC meetings, including those held November 19-20, 2002, January 22, 2003, March 19, 2003, September 25, 2003, and November 5, 2003. *See NANC Meeting Minutes* (visited Feb. 7, 2004) <http://www.fcc.gov/wcb/tapd/Nanc/nancminu.html>. Moreover, several members of NANC prepared two white (continued….)

77. To the extent that we determine IP-enabled services are information services, we seek comment on whether there are any other policy priorities that we should consider. For example, to what extent, if any, do our policy priorities for IP-enabled services assume an underlying open network architecture? Will our decisions in this proceeding affect the incentives of facilities-based IP service providers to provide network access to non-facilities-based IP service providers? Will the incentives of facilities-based and non-facilities-based IP service providers differ? How should our policies differ with a closed or proprietary architecture? Similarly, are there customer privacy issues, separate from those raised in section 222 of the Act, that this Commission should consider?

78. Further, what are the impacts of our decisions on consumers' ability to bring section 208 complaints against IP service providers? Similarly, will there be any impact on the ability of IP service providers to bring enforcement actions against carriers or other providers? Will our decisions have any affect on the Commission's ability expeditiously to address complaints between IP service and facilities-based carriers? To the extent that IP-enabled services, or some subset thereof, are considered to be information services, would state commissions have the authority to resolve interconnection or service-related disputes? As a general matter, what role should state and local governments play with respect to these issues?[227] How would that change under various approaches outlined in the item?

VII. PROCEDURAL MATTERS

A. Ex Parte Presentations

79. This matter shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules.[228] Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentations must contain summaries of the substance of the presentations and not merely a listing of the subjects discussed. More than a one or two sentence description of the views and arguments presented is generally required.[229] Other requirements pertaining to oral and written presentations are set forth in section 1.1206(b)

(Continued from previous page)

papers on the effect of VoIP on numbering resources for presentation at the January 22, 2003, and March 19, 2003 NANC meetings. *See* BellSouth et al., *VOIP Numbering Issues* (visited Feb. 7, 2004) <http://www.nanc-chair.org/docs/Nov/Nov02_VoIP_White_Paper.doc>; AT&T, *VOIP Numbering Issues – Much Ado About Nothing?* (Jan. 22, 2003) <http://www.nanc-chair.org/docs/nowg/Jan03_ATT_VOIP_Paper.doc>. Finally, the Industry Numbering Committee of the Alliance for Telecommunications Industry Solutions prepared a "Report on VoIP Numbering Issues" for presentation at the November 5, 2003 NANC meeting. *See* <http://www.nanc-chair.org/docs/nowg/Jan03_BellSouth_VOIP_Contribution.doc> (visited Feb. 7, 2004).

[227] *See, e.g.*, Letter from Matthew C. Ames, Counsel for National League of Cities et al., to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket Nos. 02-361, 03-45, 03-211 & 03-251, at 4 (filed Jan. 16, 2004) (stating that "local governments should receive adequate rent for use of public land or other public resources").

[228] 47 C.F.R. §§ 1.200 *et seq*.

[229] *See* 47 C.F.R. § 1.1206(b)(2).

of the Commission's rules.

B. Comment Filing Procedures

80. Pursuant to sections 1.415 and 1.419 of the Commission's rules,[230] interested parties may file comments within 60 days after publication of this Notice in the Federal Register and may file reply comments within 90 days after publication of this Notice in the Federal Register. All filings should refer to WC Docket No. 04-36. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS) or by filing paper copies.[231]

81. Comments filed through ECFS can be sent in electronic form via the Internet to <http://www.fcc.gov/e-file/ecfs.html>. Only one copy of an electronic submission must be filed. In completing the transmittal screen, commenters should include a full name, postal service mailing address, and the applicable docket number, which in this instance is WC Docket No. 04-36. Parties may also submit an electronic comment by Internet e-mail. To obtain filing instructions for e-mail comments, commenters should send an e-mail to ecfshelp@fcc.gov, and should include the following words in the regarding line of the message: "get form<your e-mail address>." A sample form and directions will be sent in reply.

82. Parties who choose to file by paper must file an original and four copies of each filing. Parties filing by paper must also send five (5) courtesy copies to the attention of Janice M. Myles, Wireline Competition Bureau, Competition Policy Division, 445 12th Street, S.W., Suite 5-C327, Washington, D.C. 20554, or via e-mail janice.myles@fcc.gov. Paper filings and courtesy copies must be delivered in the following manner. Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (although we continue to experience delays in receiving U.S. Postal Service mail).

83. The Commission's contractor, Natek, Inc., will receive hand-delivered or messenger-delivered paper filings for the Commission's Secretary at 236 Massachusetts Avenue, N.E., Suite 110, Washington, D.C. 20002. The filing hours at this location last from 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building. This facility is the only location where hand-delivered or messenger-delivered paper filings or courtesy copies for the Commission's Secretary and Commission staff will be accepted.

84. Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.

85. U.S. Postal Service first-class mail, Express Mail, and Priority Mail should be addressed to 445 12th Street, SW, Washington, D.C. 20554.

---

[230] 47 C.F.R. §§ 1.415, 1.419.

[231] *See* Electronic Filing of Documents in Rulemaking Proceedings, 63 Fed. Reg. 24121 (1998).

86. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

87. One copy of each filing must be sent to Qualex International, Portals II, 445 12th Street, S.W., Room CY-B402, Washington, D.C. 20554, telephone 202-863-2893, facsimile 202-863-2898, or via e-mail qualexint@aol.com.

88. Each comment and reply comment must include a short and concise summary of the substantive arguments raised in the pleading. Comments and reply comments must also comply with section 1.48 and all other applicable sections of the Commission's rules.[232] We direct all interested parties to include the name of the filing party and the date of the filing on each page of their comments and reply comments. All parties are encouraged to utilize a table of contents, regardless of the length of their submission.

89. Filings and comments may be downloaded from the Commission's ECFS web site, and filings and comments are available for public inspection and copying during regular business hours at the FCC Reference Information Center, Portals II, 445 12th Street, SW, Room CY-A257, Washington, D.C. 20554. They may also be purchased from the Commission's duplicating contractor, Qualex International, which can be reached at Portals II, 445 12th Street, SW, Room CY-B402, Washington, D.C. 20554, by telephone at 202-863-2893, by facsimile at 202-863-2898, or via e-mail at qualexint@aol.com.

C. Accessible Formats

90. To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0531 (voice), 202-418-7365 (tty).

D. Initial Regulatory Flexibility Analysis

91. As required by the Regulatory Flexibility Act, 5 U.S.C. § 603, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities of the policies and rules addressed in this document. The IRFA is set forth in Appendix A. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines as comments filed in response to this Notice of Proposed Rule Making as set forth in paragraph 80, and have a separate and distinct heading designating them as responses to the IRFA.

VIII. ORDERING CLAUSES

92. Accordingly, IT IS ORDERED that pursuant to the authority contained in sections 1, 4(i), and 4(j) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151,

[232] *See* 47 C.F.R. § 1.48.

154(i), 154(j), this *Notice of Proposed Rulemaking* IS ADOPTED.

93. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this *Notice of Proposed Rulemaking*, including the IRFA, to the Chief Counsel for Advocacy of the Small Business Administration, in accordance with the Regulatory Flexibility Act.[233]

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

[233] *See* 5 U.S.C. § 603(a).

Appendix A: Initial Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),[1] the Commission has prepared the present Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities that might result from this Notice of Proposed Rulemaking (Notice). Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the Notice provided above. The Commission will send a copy of the Notice, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.[2] In addition, the Notice and IRFA (or summaries thereof) will be published in the Federal Register.[3]

1. Need for, and Objectives of, the Proposed Rules

2. This Notice examines issues relating to services and applications making use of Internet Protocol (IP), including but not limited to voice over IP (VoIP) services (collectively, "IP-enabled services"). IP-enabled "services" could include the digital communications capabilities of increasingly higher speeds, which use a number of transmission network technologies, and which generally have in common the use of the Internet Protocol. Some of these may be highly managed to support specific communications functions. IP-enabled "applications" could include capabilities based in higher-level software that can be invoked by the customer or on the customer's behalf to provide functions that make use of communications services. The Notice states that the Commission must examine what its role should be in this new environment of increased consumer choice and power, and asks whether it can best meet its role of safeguarding the public interest by continuing its established policy of minimal regulation of the Internet and the services provided over it.

3. To assist the Commission in its analysis of how properly to treat IP-enabled services, the Notice seeks comment on ways in which the Commission might distinguish among such services, and on what regulatory treatment, if any, would be appropriate for different classes of service. The Notice then requests comment on whether the services comprising each category constitute "telecommunications services" or "information services" under the definitions set forth in the Act. Finally, recognizing the central importance of these legal classifications but also highlighting the Commission's statutory forbearance authority and Title I ancillary jurisdiction, the Notice describes a number of central regulatory requirements (including, for example, those relating to access charges, universal service, the 911 and E911 systems, and disability accessibility), and asks which, if any, should apply to each category of IP-enabled services.

---

[1] *See* 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. § 601 *et. seq.*, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, 110 Stat. 857 (1996).

[2] *See* 5 U.S.C. § 603(a).

[3] See id.

2. Legal Basis

4. The legal basis for any action that may be taken pursuant to this Notice is contained in sections 1, 4(i), and 4(j) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i) and 154(j), and sections 1.1, 1.48, 1.411, 1.412, 1.415, 1.419, and 1.1200-1.1216, of the Commission's rules, 47 C.F.R. §§ 1.1, 1.48, 1.411, 1.412, 1.415, 1.419, and 1.1200-1.1216.

3. Description and Estimate of the Number of Small Entities to Which the Proposed Rules May Apply

5. The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules.[4] The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."[5] In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.[6] A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).[7] This present Notice of Proposed Rulemaking might, in theory, reach a variety of industries; out of an abundance of caution, we have attempted to cast a wide net in describing categories of potentially affected small entities. We would appreciate any comment on the extent to which the various entities might be affected by our action.

6. *Small Businesses.* Nationwide, there are a total of approximately 22.4 million small businesses, according to SBA data.[8]

7. *Small Organizations*. Nationwide, there are approximately 1.6 million small organizations.[9]

---

4 5 U.S.C. §§ 603(b)(3), 604(a)(3).

5 *Id*. § 601(6).

6 5 U.S.C. § 601(3) (incorporating by reference the definition of "small business concern" in the Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such terms which are appropriate to the activities of the agency and publishes such definitions(s) in the Federal Register."

7 15 U.S.C. § 632.

8 *See* SBA, Programs and Services, SBA Pamphlet No. CO-0028, at page 40 (July 2002).

9 Independent Sector, The New Nonprofit Almanac & Desk Reference (2002).

8. *Small Governmental Jurisdictions.* The term "small governmental jurisdiction" is defined as "governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand."[10] As of 1997, there were approximately 87,453 governmental jurisdictions in the United States.[11] This number includes 39,044 county governments, municipalities, and townships, of which 37,546 (approximately 96.2%) have populations of fewer than 50,000, and of which 1,498 have populations of 50,000 or more. Thus, we estimate the number of small governmental jurisdictions overall to be 84,098 or fewer.

a. Telecommunications Service Entities

(i) Wireline Carriers and Service Providers

9. We have included small incumbent local exchange carriers in this present RFA analysis. As noted above, a "small business" under the RFA is one that, *inter alia*, meets the pertinent small business size standard (*e.g.*, a telephone communications business having 1,500 or fewer employees), and "is not dominant in its field of operation."[12] The SBA's Office of Advocacy contends that, for RFA purposes, small incumbent local exchange carriers are not dominant in their field of operation because any such dominance is not "national" in scope.[13] We have therefore included small incumbent local exchange carriers in this RFA analysis, although we emphasize that this RFA action has no effect on Commission analyses and determinations in other, non-RFA contexts.

10. *Incumbent Local Exchange Carriers (LECs).* Neither the Commission nor the SBA has developed a small business size standard specifically for incumbent local exchange services. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees.[14] According to Commission data,[15] 1,337 carriers have reported that they

---

[10] 5 U.S.C. § 601(5).

[11] U.S. Census Bureau, Statistical Abstract of the United States: 2000, Section 9, pages 299-300, Tables 490 and 492.

[12] *Id*. § 632.

[13] Letter from Jere W. Glover, Chief Counsel for Advocacy, SBA, to William E. Kennard, Chairman, FCC (May 27, 1999). The Small Business Act contains a definition of "small-business concern," which the RFA incorporates into its own definition of "small business." *See* 15 U.S.C. § 632(a) (Small Business Act); 5 U.S.C. § 601(3) (RFA). SBA regulations interpret "small business concern" to include the concept of dominance on a national basis. *See* 13 C.F.R. § 121.102(b).

[14] 13 C.F.R. § 121.201, NAICS code 517110 (changed from 513310 in Oct. 2002).

are engaged in the provision of incumbent local exchange services. Of these 1,337 carriers, an estimated 1,032 have 1,500 or fewer employees and 305 have more than 1,500 employees. Consequently, the Commission estimates that most providers of incumbent local exchange service are small businesses that may be affected by our action.

11. *Competitive Local Exchange Carriers (CLECs), Competitive Access Providers (CAPs), "Shared-Tenant Service Providers," and "Other Local Service Providers."* Neither the Commission nor the SBA has developed a small business size standard specifically for these service providers. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees.[16] According to Commission data,[17] 609 carriers have reported that they are engaged in the provision of either competitive access provider services or competitive local exchange carrier services. Of these 609 carriers, an estimated 458 have 1,500 or fewer employees and 151 have more than 1,500 employees. In addition, 16 carriers have reported that they are "Shared-Tenant Service Providers," and all 16 are estimated to have 1.500 or fewer employees. In addition, 35 carriers have reported that they are "Other Local Service Providers." Of the 35, an estimated 34 have 1,500 or fewer employees and one has more than 1,500 employees. Consequently, the Commission estimates that most providers of competitive local exchange service, competitive access providers, "Shared-Tenant Service Providers," and "Other Local Service Providers" are small entities that may be affected by our action.

12. *Local Resellers.* The SBA has developed a small business size standard for the category of Telecommunications Resellers. Under that size standard, such a business is small if it has 1,500 or fewer employees.[18] According to Commission data,[19] 133 carriers have reported that they are engaged in the provision of local resale services. Of these, an estimated 127 have 1,500 or fewer employees and six have more than 1,500 employees. Consequently, the Commission estimates that the majority of local resellers are small entities that may be affected by our action.

13. *Toll Resellers.* The SBA has developed a small business size standard for the category of Telecommunications Resellers. Under that size standard, such a business is small if it has 1,500 or fewer employees.[20] According to Commission data,[21] 625 carriers have reported

(Continued from previous page)

[15] FCC, Wireline Competition Bureau, Industry Analysis and Technology Division, "Trends in Telephone Service" Table 5.3, page 5-5 (Aug. 2003) ("Trends in Telephone Service"). This source uses data that are current as of December 31, 2001.

[16] 13 C.F.R. § 121.201, NAICS code 517110 (changed from 513310 in Oct. 2002).

[17] "Trends in Telephone Service" at Table 5.3.

[18] 13 CFR § 121.201, NAICS code 517310 (changed from 513330 in Oct. 2002).

[19] "Trends in Telephone Service" at Table 5.3.

[20] 13 CFR § 121.201, NAICS code 517310 (changed to 513330 in Oct. 2002).

that they are engaged in the provision of toll resale services. Of these, an estimated 590 have 1,500 or fewer employees and 35 have more than 1,500 employees. Consequently, the Commission estimates that the majority of toll resellers are small entities that may be affected by our action.

14. *Payphone Service Providers (PSPs)*. Neither the Commission nor the SBA has developed a small business size standard specifically for payphone services providers. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees.[22] According to Commission data,[23] 761 carriers have reported that they are engaged in the provision of payphone services. Of these, an estimated 757 have 1,500 or fewer employees and four have more than 1,500 employees. Consequently, the Commission estimates that the majority of payphone service providers are small entities that may be affected by our action.

15. *Interexchange Carriers (IXCs)*. Neither the Commission nor the SBA has developed a small business size standard specifically for providers of interexchange services. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees.[24] According to Commission data,[25] 261 carriers have reported that they are engaged in the provision of interexchange service. Of these, an estimated 223 have 1,500 or fewer employees and 38 have more than 1,500 employees. Consequently, the Commission estimates that the majority of IXCs are small entities that may be affected by our action.

16. *Operator Service Providers (OSPs)*. Neither the Commission nor the SBA has developed a small business size standard specifically for operator service providers. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees.[26] According to Commission data,[27] 23 carriers have reported that they are engaged in the provision of operator services. Of these, an estimated 22 have 1,500 or fewer employees and one has more than 1,500 employees. Consequently, the Commission estimates that the majority of OSPs are small entities that may be affected by our action.

(Continued from previous page)

[21] "Trends in Telephone Service" at Table 5.3.

[22] 13 CFR § 121.201, NAICS code 517110 (changed from 513310 in Oct. 2002).

[23] "Trends in Telephone Service" at Table 5.3.

[24] 13 C.F.R. § 121.201, NAICS code 517110 (changed from 513310 in Oct. 2002).

[25] "Trends in Telephone Service" at Table 5.3.

[26] 13 C.F.R. § 121.201, NAICS code 517110 (changed from 513310 in Oct. 2002).

[27] "Trends in Telephone Service" at Table 5.3.

17. *Prepaid Calling Card Providers*. Neither the Commission nor the SBA has developed a small business size standard specifically for prepaid calling card providers. The appropriate size standard under SBA rules is for the category Telecommunications Resellers. Under that size standard, such a business is small if it has 1,500 or fewer employees.[28] According to Commission data,[29] 37 carriers have reported that they are engaged in the provision of prepaid calling cards. Of these, an estimated 36 have 1,500 or fewer employees and one has more than 1,500 employees. Consequently, the Commission estimates that the majority of prepaid calling card providers are small entities that may be affected by our action.

18. *800 and 800-Like Service Subscribers.*[30] Neither the Commission nor the SBA has developed a small business size standard specifically for 800 and 800-like service ("toll free") subscribers. The appropriate size standard under SBA rules is for the category Telecommunications Resellers. Under that size standard, such a business is small if it has 1,500 or fewer employees.[31] The most reliable source of information regarding the number of these service subscribers appears to be data the Commission collects on the 800, 888, and 877 numbers in use.[32] According to our data, at the end of January, 1999, the number of 800 numbers assigned was 7,692,955; the number of 888 numbers assigned was 7,706,393; and the number of 877 numbers assigned was 1,946,538. We do not have data specifying the number of these subscribers that are not independently owned and operated or have more than 1,500 employees, and thus are unable at this time to estimate with greater precision the number of toll free subscribers that would qualify as small businesses under the SBA size standard. Consequently, we estimate that there are 7,692,955 or fewer small entity 800 subscribers; 7,706,393 or fewer small entity 888 subscribers; and 1,946,538 or fewer small entity 877 subscribers.

(ii) International Service Providers

19. The Commission has not developed a small business size standard specifically for providers of international service. The appropriate size standards under SBA rules are for the two broad categories of Satellite Telecommunications and Other Telecommunications. Under both categories, such a business is small if it has $12.5 million or less in average annual receipts.[33] For the first category of Satellite Telecommunications, Census Bureau data for 1997

---

[28] 13 C.F.R. § 121.201, NAICS code 517310 (changed from 513330 in Oct. 2002).

[29] "Trends in Telephone Service" at Table 5.3.

[30] We include all toll-free number subscribers in this category, including those for 888 numbers.

[31] 13 C.F.R. § 121.201, NAICS code 517310 (changed from 513330 in Oct. 2002).

[32] FCC, Common Carrier Bureau, Industry Analysis Division, *Study on Telephone Trends*, Tables 21.2, 21.3, and 21.4 (Feb. 1999).

[33] 13 C.F.R. § 121.201, NAICS codes 517410 and 517910 (changed from 513340 and 513390 in Oct. 2002).

show that there were a total of 324 firms that operated for the entire year.[34] Of this total, 273 firms had annual receipts of under $10 million, and an additional 24 firms had receipts of $10 million to $24,999,999. Thus, the majority of Satellite Telecommunications firms can be considered small.

20. The second category – Other Telecommunications – includes "establishments primarily engaged in … providing satellite terminal stations and associated facilities operationally connected with one or more terrestrial communications systems and capable of transmitting telecommunications to or receiving telecommunications from satellite systems."[35] According to Census Bureau data for 1997, there were 439 firms in this category that operated for the entire year.[36] Of this total, 424 firms had annual receipts of $5 million to $9,999,999 and an additional six firms had annual receipts of $10 million to $24,999,990. Thus, under this second size standard, the majority of firms can be considered small.

(iii) Wireless Telecommunications Service Providers

21. *Wireless Service Providers.* The SBA has developed a small business size standard for wireless firms within the two broad economic census categories of "Paging"[37] and "Cellular and Other Wireless Telecommunications."[38] Under both SBA categories, a wireless business is small if it has 1,500 or fewer employees. For the census category of Paging, Census Bureau data for 1997 show that there were 1,320 firms in this category, total, that operated for the entire year.[39] Of this total, 1,303 firms had employment of 999 or fewer employees, and an additional 17 firms had employment of 1,000 employees or more.[40] Thus, under this category and associated small business size standard, the majority of firms can be considered small. For the census category Cellular and Other Wireless Telecommunications, Census Bureau data for

[34] U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 513340 (issued Oct. 2000).

[35] Office of Management and Budget, North American Industry Classification System 513 (1997) (NAICS code 513390, changed to 517910 in Oct. 2002).

[36] U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 513390 (issued Oct. 2000).

[37] 13 C.F.R. § 121.201, NAICS code 513321 (changed to 517211 in October 2002).

[38] 13 C.F.R. § 121.201, NAICS code 513322 (changed to 517212 in October 2002).

[39] U.S. Census Bureau, 1997 Economic Census, Subject Series: "Information," Table 5, Employment Size of Firms Subject to Federal Income Tax: 1997, NAICS code 513321 (issued October 2000).

[40] *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is "Firms with 1000 employees or more."

1997 show that there were 977 firms in this category, total, that operated for the entire year.[41] Of this total, 965 firms had employment of 999 or fewer employees, and an additional 12 firms had employment of 1,000 employees or more.[42] Thus, under this second category and size standard, the majority of firms can, again, be considered small.

22. *Cellular Licensees.* The SBA has developed a small business size standard for wireless firms within the broad economic census category "Cellular and Other Wireless Telecommunications."[43] Under this SBA category, a wireless business is small if it has 1,500 or fewer employees. For the census category Cellular and Other Wireless Telecommunications firms, Census Bureau data for 1997 show that there were 977 firms in this category, total, that operated for the entire year.[44] Of this total, 965 firms had employment of 999 or fewer employees, and an additional 12 firms had employment of 1,000 employees or more.[45] Thus, under this category and size standard, the great majority of firms can be considered small. According to the most recent *Trends in Telephone Service* data, 719 carriers reported that they were engaged in the provision of cellular service, Personal Communications Service (PCS), or Specialized Mobile Radio (SMR) Telephony services, which are placed together in the data.[46] We have estimated that 294 of these are small, under the SBA small business size standard.[47]

23. *Common Carrier Paging.* The SBA has developed a small business size standard for wireless firms within the broad economic census categories of **"**Cellular and Other Wireless Telecommunications."[48] Under this SBA category, a wireless business is small if it has 1,500 or fewer employees. For the census category of Paging, Census Bureau data for 1997 show that there were 1,320 firms in this category, total, that operated for the entire year.[49] Of

[41] U.S. Census Bureau, 1997 Economic Census, Subject Series: "Information," Table 5, Employment Size of Firms Subject to Federal Income Tax: 1997, NAICS code 513322 (issued October 2000).

[42] *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is "Firms with 1000 employees or more."

[43] 13 C.F.R. § 121.201, NAICS code 513322 (changed to 517212 in October 2002).

[44] U.S. Census Bureau, 1997 Economic Census, Subject Series: "Information," Table 5, Employment Size of Firms Subject to Federal Income Tax: 1997, NAICS code 513322 (issued October 2000).

[45] *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is "Firms with 1000 employees or more."

[46] "Trends in Telephone Service" at Table 5.3.

[47] "Trends in Telephone Service" at Table 5.3.

[48] 13 C.F.R. § 121.201, NAICS code 513322 (changed to 517212 in October 2002).

[49] U.S. Census Bureau, 1997 Economic Census, Subject Series: "Information," Table 5, Employment Size of Firms Subject to Federal Income Tax: 1997, NAICS code 513321 (issued October 2000).

this total, 1,303 firms had employment of 999 or fewer employees, and an additional 17 firms had employment of 1,000 employees or more.[50] Thus, under this category and associated small business size standard, the great majority of firms can be considered small. In the Paging *Third Report and Order*, we developed a small business size standard for "small businesses" and "very small businesses" for purposes of determining their eligibility for special provisions such as bidding credits and installment payments.[51] A "small business" is an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding $15 million for the preceding three years. Additionally, a "very small business" is an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than $3 million for the preceding three years.[52] The SBA has approved these small business size standards.[53] An auction of Metropolitan Economic Area licenses commenced on February 24, 2000, and closed on March 2, 2000.[54] Of the 985 licenses auctioned, 440 were sold. Fifty-seven companies claiming small business status won. According to the most recent *Trends in Telephone Service,* 433 carriers reported that they were engaged in the provision of paging and messaging services.[55] Of those, we estimate that 423 are small, under the SBA approved small business size standard.[56]

24. *Wireless Communications Services***.** This service can be used for fixed, mobile, radiolocation, and digital audio broadcasting satellite uses. The Commission established small business size standards for the wireless communications services (WCS) auction. A "small business" is an entity with average gross revenues of $40 million for each of the three preceding years, and a "very small business" is an entity with average gross revenues of $15 million for each of the three preceding years. The SBA has approved these small business size standards.[57] The Commission auctioned geographic area licenses in the WCS service. In the auction, there

[50] *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is "Firms with 1000 employees or more."

[51] Amendment of Part 90 of the Commission's Rules to Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Service, PR Docket No. 89-552, Third Report and Order and Fifth Notice of Proposed Rulemaking, 12 FCC Rcd 10943, 11068-70, paras. 291-295, 62 FR 16004 (Apr. 3, 1997).

[52] *See* Letter to Amy Zoslov, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, FCC , from A. Alvarez, Administrator, SBA (Dec. 2, 1998) (SBA Dec. 2, 1998 letter).

[53] *Revision of Part 22 and Part 90 of the Commission's Rules to Facilitate Future Development of Paging Systems*, Memorandum Opinion and Order on Reconsideration and Third Report and Order, 14 FCC Rcd 10030 paras. 98-107 (1999).

[54] *Id. at* 10085 para. 98.

[55] "Trends in Telephone Service" at Table 5.3.

[56] "Trends in Telephone Service" at Table 5.3.

[57] SBA Dec. 2, 1998 letter.

were seven winning bidders that qualified as "very small business" entities, and one that qualified as a "small business" entity.

25. *Wireless Telephony*. Wireless telephony includes cellular, personal communications services (PCS), and specialized mobile radio (SMR) telephony carriers. As noted earlier, the SBA has developed a small business size standard for "Cellular and Other Wireless Telecommunications" services.[58] Under that SBA small business size standard, a business is small if it has 1,500 or fewer employees.[59] According to the most recent *Trends in Telephone Service* data, 719 carriers reported that they were engaged in the provision of wireless telephony.[60] We have estimated that 294 of these are small under the SBA small business size standard.

26. *Broadband Personal Communications Service*. The broadband Personal Communications Service (PCS) spectrum is divided into six frequency blocks designated A through F, and the Commission has held auctions for each block. The Commission defined "small entity" for Blocks C and F as an entity that has average gross revenues of $40 million or less in the three previous calendar years.[61] For Block F, an additional classification for "very small business" was added and is defined as an entity that, together with its affiliates, has average gross revenues of not more than $15 million for the preceding three calendar years."[62] These standards defining "small entity" in the context of broadband PCS auctions have been approved by the SBA.[63] No small businesses, within the SBA-approved small business size standards bid successfully for licenses in Blocks A and B. There were 90 winning bidders that qualified as small entities in the Block C auctions. A total of 93 small and very small business bidders won approximately 40 percent of the 1,479 licenses for Blocks D, E, and F.[64] On March 23, 1999, the Commission re-auctioned 347 C, D, E, and F Block licenses. There were 48 small business winning bidders. On January 26, 2001, the Commission completed the

[58] 13 C.F.R. § 121.201, NAICS code 513322 (changed to 517212 in October 2002).

[59] 13 C.F.R. § 121.201, NAICS code 513322 (changed to 517212 in October 2002).

[60] "Trends in Telephone Service" at Table 5.3.

[61] See Amendment of Parts 20 and 24 of the Commission's Rules – Broadband PCS Competitive Bidding and the Commercial Mobile Radio Service Spectrum Cap, WT Docket No. 96-59, Report and Order, 11 FCC Rcd 7824, 61 FR 33859 (July 1, 1996) (PCS Order); see also 47 C.F.R. § 24.720(b).

[62] See PCS Order).

[63] *See. e.g., Implementation of Section 309(j) of the Communications Act – Competitive Bidding*, PP Docket No. 93-253, Fifth Report and Order, 9 FCC Rcd 5332, 59 FR 37566 (July 22, 1994).

[64] FCC News, Broadband PCS, D, E and F Block Auction Closes, No. 71744 (rel. Jan. 14, 1997). See also Amendment of the Commission's Rules Regarding Installment Payment Financing for Personal Communications Services (PCS) Licenses, WT Docket No. 97-82, Second Report and Order, 12 FCC Rcd 16436, 62 FR 55348 (Oct. 24, 1997).

auction of 422 C and F Broadband PCS licenses in Auction No. 35. Of the 35 winning bidders in this auction, 29 qualified as "small" or "very small" businesses. Subsequent events, concerning Auction 35, including judicial and agency determinations, resulted in a total of 163 C and F Block licenses being available for grant. In addition, we note that, as a general matter, the number of winning bidders that qualify as small businesses at the close of an auction does not necessarily represent the number of small businesses currently in service. Also, the Commission does not generally track subsequent business size unless, in the context of assignments or transfers, unjust enrichment issues are implicated.

27. *Narrowband Personal Communications Services.* To date, two auctions of narrowband personal communications services (PCS) licenses have been conducted. For purposes of the two auctions that have already been held, "small businesses" were entities with average gross revenues for the prior three calendar years of $40 million or less. Through these auctions, the Commission has awarded a total of 41 licenses, out of which 11 were obtained by small businesses. To ensure meaningful participation of small business entities in future auctions, the Commission has adopted a two-tiered small business size standard in the *Narrowband PCS Second Report and Order*.[65] A "small business" is an entity that, together with affiliates and controlling interests, has average gross revenues for the three preceding years of not more than $40 million. A "very small business" is an entity that, together with affiliates and controlling interests, has average gross revenues for the three preceding years of not more than $15 million. The SBA has approved these small business size standards.[66] In the future, the Commission will auction 459 licenses to serve Metropolitan Trading Areas (MTAs) and 408 response channel licenses. There is also one megahertz of narrowband PCS spectrum that has been held in reserve and that the Commission has not yet decided to release for licensing. The Commission cannot predict accurately the number of licenses that will be awarded to small entities in future actions. However, four of the 16 winning bidders in the two previous narrowband PCS auctions were small businesses, as that term was defined. The Commission assumes, for purposes of this analysis, that a large portion of the remaining narrowband PCS licenses will be awarded to small entities. The Commission also assumes that at least some small businesses will acquire narrowband PCS licenses by means of the Commission's partitioning and disaggregation rules.

28. *220 MHz Radio Service – Phase I Licensees.* The 220 MHz service has both Phase I and Phase II licenses. Phase I licensing was conducted by lotteries in 1992 and 1993. There are approximately 1,515 such non-nationwide licensees and four nationwide licensees currently authorized to operate in the 220 MHz band. The Commission has not developed a small business size standard for small entities specifically applicable to such incumbent 220

[65] *Amendment of the Commission's Rules to Establish New Personal Communications Services, Narrowband PCS*, Docket No. ET 92-100, Docket No. PP 93-253, Second Report and Order and Second Further Notice of Proposed Rulemaking, 15 FCC Rcd 10456, 65 FR 35875 (June 6, 2000).

[66] *See* SBA Dec. 2, 1998 letter.

MHz Phase I licensees. To estimate the number of such licensees that are small businesses, we apply the small business size standard under the SBA rules applicable to "Cellular and Other Wireless Telecommunications" companies. This category provides that a small business is a wireless company employing no more than 1,500 persons.[67] According to the Census Bureau data for 1997, only 12 wireless firms out of a total of 1,238 such firms that operated for the entire year, had 1,000 or more employees.[68] If this general ratio continues in the context of Phase I 220 MHz licensees, the Commission estimates that nearly all such licensees are small businesses under the SBA's small business size standard.

29. *220 MHz Radio Service – Phase II Licensees.* The 220 MHz service has both Phase I and Phase II licenses. The Phase II 220 MHz service is a new service, and is subject to spectrum auctions. In the *220 MHz Third Report and Order*, we adopted a small business size standard for "small" and "very small" businesses for purposes of determining their eligibility for special provisions such as bidding credits and installment payments.[69] This small business size standard indicates that a "small business" is an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding $15 million for the preceding three years.[70] A "very small business" is an entity that, together with its affiliates and controlling principals, has average gross revenues that do not exceed $3 million for the preceding three years. The SBA has approved these small business size standards.[71] Auctions of Phase II licenses commenced on September 15, 1998, and closed on October 22, 1998.[72] In the first auction, 908 licenses were auctioned in three different-sized geographic areas: three nationwide licenses, 30 Regional Economic Area Group (EAG) Licenses, and 875 Economic Area (EA) Licenses. Of the 908 licenses auctioned, 693 were sold.[73] Thirty-nine small businesses won licenses in the first 220 MHz auction. The second auction included 225 licenses: 216 EA licenses and 9 EAG licenses. Fourteen companies claiming small business status won 158 licenses.[74]

---

[67] 13 CFR § 121.201, NAICS code 513322 (changed to 517212 in October 2002).

[68] U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization), Table 5, NAICS code 513322 (issued October 2000)."

[69] *220 MHz Third Report and Order*, 12 FCC Rcd 10943, 11068-70 paras. 291-295 (1997).

[70] *Id.* at 11068-70 para. 291.

[71] *See* letter to D. Phythyon, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from A. Alvarez, Administrator, Small Business Administration (Jan. 6, 1998).

[72] *See generally* Public Notice, "220 MHz Service Auction Closes," 14 FCC Rcd 605 (1998).

[73] *See, e.g.,* Public Notice, "FCC Announces It is Prepared to Grant 654 Phase II 220 MHz Licenses After Final Payment is Made," 14 FCC Rcd 1085 (1999).

[74] Public Notice, "Phase II 220 MHz Service Spectrum Auction Closes," 14 FCC Rcd 11218 (1999).

30. *800 MHz and 900 MHz Specialized Mobile Radio Licenses.* The Commission awards "small entity" and "very small entity" bidding credits in auctions for Specialized Mobile Radio (SMR) geographic area licenses in the 800 MHz and 900 MHz bands to firms that had revenues of no more than $15 million in each of the three previous calendar years, or that had revenues of no more than $3 million in each of the previous calendar years, respectively.[75] These bidding credits apply to SMR providers in the 800 MHz and 900 MHz bands that either hold geographic area licenses or have obtained extended implementation authorizations. The Commission does not know how many firms provide 800 MHz or 900 MHz geographic area SMR service pursuant to extended implementation authorizations, nor how many of these providers have annual revenues of no more than $15 million. One firm has over $15 million in revenues. The Commission assumes, for purposes here, that all of the remaining existing extended implementation authorizations are held by small entities, as that term is defined by the SBA. The Commission has held auctions for geographic area licenses in the 800 MHz and 900 MHz SMR bands. There were 60 winning bidders that qualified as small or very small entities in the 900 MHz SMR auctions. Of the 1,020 licenses won in the 900 MHz auction, bidders qualifying as small or very small entities won 263 licenses. In the 800 MHz auction, 38 of the 524 licenses won were won by small and very small entities. Consequently, the Commission estimates that there are 301 or fewer small entity SMR licensees in the 800 MHz and 900 MHz bands that may be affected by the rules and policies adopted herein.

31. *700 MHz Guard Band Licensees.* In the 700 MHz Guard Band Order, we adopted a small business size standard for "small businesses" and "very small businesses" for purposes of determining their eligibility for special provisions such as bidding credits and installment payments.[76] A "small business" as an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding $15 million for the preceding three years. Additionally, a "very small business" is an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than $3 million for the preceding three years. An auction of 52 Major Economic Area (MEA) licenses commenced on September 6, 2000, and closed on September 21, 2000.[77] Of the 104 licenses auctioned, 96 licenses were sold to nine bidders. Five of these bidders were small businesses that won a total of 26 licenses. A second auction of 700 MHz Guard Band licenses commenced on February 13, 2001 and closed on February 21, 2001. All eight of the licenses auctioned were sold to three bidders. One of these bidders was a small business that won a total of two licenses.[78]

32. *Rural Radiotelephone Service.* The Commission has not adopted a size standard

[75] 47 CFR § 90.814(b)(1).

[76] *See* Service *Rules for the 746-764 MHz Bands, and Revisions to part 27 of the Commission's Rules*, WT Docket No. 99-168, Second Report and Order, 65 FR 17599 (April 4, 2000).

[77] *See generally* Public Notice, "220 MHz Service Auction Closes," Report No. WT 98-36 (Oct. 23, 1998).

[78] Public Notice, "700 MHz Guard Band Auction Closes," DA 01-478 (rel. Feb. 22, 2001).

for small businesses specific to the Rural Radiotelephone Service.[79] A significant subset of the Rural Radiotelephone Service is the Basic Exchange Telephone Radio System (BETRS).[80] The Commission uses the SBA's small business size standard applicable to "Cellular and Other Wireless Telecommunications," *i.e.*, an entity employing no more than 1,500 persons.[81] There are approximately 1,000 licensees in the Rural Radiotelephone Service, and the Commission estimates that there are 1,000 or fewer small entity licensees in the Rural Radiotelephone Service that may be affected by the rules and policies adopted herein.

33. *Air-Ground Radiotelephone Service.* The Commission has not adopted a small business size standard specific to the Air-Ground Radiotelephone Service.[82] We will use SBA's small business size standard applicable to "Cellular and Other Wireless Telecommunications," *i.e.*, an entity employing no more than 1,500 persons.[83] There are approximately 100 licensees in the Air-Ground Radiotelephone Service, and we estimate that almost all of them qualify as small under the SBA small business size standard.

34. *Aviation and Marine Radio Services.* Small businesses in the aviation and marine radio services use a very high frequency (VHF) marine or aircraft radio and, as appropriate, an emergency position-indicating radio beacon (and/or radar) or an emergency locator transmitter. The Commission has not developed a small business size standard specifically applicable to these small businesses. For purposes of this analysis, the Commission uses the SBA small business size standard for the category "Cellular and Other Telecommunications," which is 1,500 or fewer employees.[84] Most applicants for recreational licenses are individuals. Approximately 581,000 ship station licensees and 131,000 aircraft station licensees operate domestically and are not subject to the radio carriage requirements of any statute or treaty. For purposes of our evaluations in this analysis, we estimate that there are up to approximately 712,000 licensees that are small businesses (or individuals) under the SBA standard. In addition, between December 3, 1998 and December 14, 1998, the Commission held an auction of 42 VHF Public Coast licenses in the 157.1875-157.4500 MHz (ship transmit) and 161.775-162.0125 MHz (coast transmit) bands. For purposes of the auction, the Commission defined a "small" business as an entity that, together with controlling interests and affiliates, has average gross revenues for the preceding three years not to exceed $15 million dollars. In addition, a "very small" business is one that, together with controlling interests and

---

79 The service is defined in section 22.99 of the Commission's Rules, 47 C.F.R. § 22.99.

80 BETRS is defined in sections 22.757 and 22.759 of the Commission's Rules, 47 C.F.R. §§ 22.757 and 22.759.

81 13 C.F.R. § 121.201, NAICS code 513322 (changed to 517212 in October 2002).

82 The service is defined in section 22.99 of the Commission's Rules, 47 C.F.R. § 22.99.

83 13 CFR § 121.201, NAICS codes 513322 (changed to 517212 in October 2002).

84 13 CFR § 121.201, NAICS code 513322 (changed to 517212 in October 2002).

affiliates, has average gross revenues for the preceding three years not to exceed $3 million dollars.[85] There are approximately 10,672 licensees in the Marine Coast Service, and the Commission estimates that almost all of them qualify as "small" businesses under the above special small business size standards.

35. *Fixed Microwave Services.* Fixed microwave services include common carrier,[86] private operational-fixed,[87] and broadcast auxiliary radio services.[88] At present, there are approximately 22,015 common carrier fixed licensees and 61,670 private operational-fixed licensees and broadcast auxiliary radio licensees in the microwave services. The Commission has not created a size standard for a small business specifically with respect to fixed microwave services. For purposes of this analysis, the Commission uses the SBA small business size standard for the category "Cellular and Other Telecommunications," which is 1,500 or fewer employees.[89] The Commission does not have data specifying the number of these licensees that have more than 1,500 employees, and thus is unable at this time to estimate with greater precision the number of fixed microwave service licensees that would qualify as small business concerns under the SBA's small business size standard. Consequently, the Commission estimates that there are up to 22,015 common carrier fixed licensees and up to 61,670 private operational-fixed licensees and broadcast auxiliary radio licensees in the microwave services that may be small and may be affected by the rules and policies adopted herein. We noted, however, that the common carrier microwave fixed licensee category includes some large entities.

36. *Offshore Radiotelephone Service.* This service operates on several UHF television broadcast channels that are not used for television broadcasting in the coastal areas of states bordering the Gulf of Mexico.[90] There are presently approximately 55 licensees in this

---

[85] *Amendment of the Commission's Rules Concerning Maritime Communications*, PR Docket No. 92-257, Third Report and Order and Memorandum Opinion and Order, 13 FCC Rcd 19853 (1998).

[86] *See* 47 C.F.R. §§ 101 *et seq*. (formerly, Part 21 of the Commission's Rules) for common carrier fixed microwave services (except Multipoint Distribution Service).

[87] Persons eligible under parts 80 and 90 of the Commission's Rules can use Private Operational-Fixed Microwave services. *See* 47 C.F.R. Parts 80 and 90. Stations in this service are called operational-fixed to distinguish them from common carrier and public fixed stations. Only the licensee may use the operational-fixed station, and only for communications related to the licensee's commercial, industrial, or safety operations.

[88] Auxiliary Microwave Service is governed by Part 74 of Title 47 of the Commission's rules. *See* 47 C.F.R. Part 74. This service is available to licensees of broadcast stations and to broadcast and cable network entities. Broadcast auxiliary microwave stations are used for relaying broadcast television signals from the studio to the transmitter, or between two points such as a main studio and an auxiliary studio. The service also includes mobile television pickups, which relay signals from a remote location back to the studio.

[89] 13 CFR § 121.201, NAICS code 513322 (changed to 517212 in October 2002).

[90] This service is governed by Subpart I of Part 22 of the Commission's rules. *See* 47 C.F.R. §§ 22.1001-22.1037.

service. We are unable to estimate at this time the number of licensees that would qualify as small under the SBA's small business size standard for "Cellular and Other Wireless Telecommunications" services.[91] Under that SBA small business size standard, a business is small if it has 1,500 or fewer employees.[92]

37. *39 GHz Service.* The Commission created a special small business size standard for 39 GHz licenses – an entity that has average gross revenues of $40 million or less in the three previous calendar years.[93] An additional size standard for "very small business" is: an entity that, together with affiliates, has average gross revenues of not more than $15 million for the preceding three calendar years.[94] The SBA has approved these small business size standards.[95] The auction of the 2,173 39 GHz licenses began on April 12, 2000 and closed on May 8, 2000. The 18 bidders who claimed small business status won 849 licenses. Consequently, the Commission estimates that 18 or fewer 39 GHz licensees are small entities that may be affected by the rules and polices adopted herein.

38. *Multipoint Distribution Service, Multichannel Multipoint Distribution Service, and ITFS.* Multichannel Multipoint Distribution Service (MMDS) systems, often referred to as "wireless cable," transmit video programming to subscribers using the microwave frequencies of the Multipoint Distribution Service (MDS) and Instructional Television Fixed Service (ITFS).[96] In connection with the 1996 MDS auction, the Commission established a small business size standard as an entity that had annual average gross revenues of less than $40 million in the previous three calendar years.[97] The MDS auctions resulted in 67 successful bidders obtaining licensing opportunities for 493 Basic Trading Areas (BTAs). Of the 67 auction winners, 61 met the definition of a small business. MDS also includes licensees of stations authorized prior to the auction. In addition, the SBA has developed a small business size standard for Cable and Other Program Distribution, which includes all such companies

---

91 13 C.F.R. § 121.201, NAICS code 513322 (changed to 517212 in October 2002).

92 *Id*.

93 See Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands, ET Docket No. 95-183, Report and Order, 63 Fed.Reg. 6079 (Feb. 6, 1998).

94 *Id.*

95 *See* Letter to Kathleen O'Brien Ham, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, FCC, from Aida Alvarez, Administrator, SBA (Feb. 4, 1998).

96 Amendment of Parts 21 and 74 of the Commission's Rules with Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service and Implementation of Section 309(j) of the Communications Act – Competitive Bidding, MM Docket No. 94-131 and PP Docket No. 93-253, Report and Order, 10 FCC Rcd 9589, 9593 para. 7 (1995).

97 47 C.F.R. § 21.961(b)(1).

generating $12.5 million or less in annual receipts.[98] According to Census Bureau data for 1997, there were a total of 1,311 firms in this category, total, that had operated for the entire year.[99] Of this total, 1,180 firms had annual receipts of under $10 million and an additional 52 firms had receipts of $10 million or more but less than $25 million. Consequently, we estimate that the majority of providers in this service category are small businesses that may be affected by the rules and policies adopted herein. This SBA small business size standard also appears applicable to ITFS. There are presently 2,032 ITFS licensees. All but 100 of these licenses are held by educational institutions. Educational institutions are included in this analysis as small entities.[100] Thus, we tentatively conclude that at least 1,932 licensees are small businesses.

39. *Local Multipoint Distribution Service.* Local Multipoint Distribution Service (LMDS) is a fixed broadband point-to-multipoint microwave service that provides for two-way video telecommunications.[101] The auction of the 1,030 Local Multipoint Distribution Service (LMDS) licenses began on February 18, 1998 and closed on March 25, 1998. The Commission established a small business size standard for LMDS licenses as an entity that has average gross revenues of less than $40 million in the three previous calendar years.[102] An additional small business size standard for "very small business" was added as an entity that, together with its affiliates, has average gross revenues of not more than $15 million for the preceding three calendar years.[103] The SBA has approved these small business size standards in the context of LMDS auctions.[104] There were 93 winning bidders that qualified as small entities in the LMDS auctions. A total of 93 small and very small business bidders won approximately 277 A Block licenses and 387 B Block licenses. On March 27, 1999, the Commission re-auctioned 161 licenses; there were 40 winning bidders. Based on this information, we conclude that the number of small LMDS licenses consists of the 93 winning bidders in the first auction and the 40 winning bidders in the re-auction, for a total of 133 small entity LMDS providers.

40. *218-219 MHz Service.* The first auction of 218-219 MHz spectrum resulted in

---

98 13 C.F.R. § 121.201, NAICS code 513220 (changed to 517510 in October 2002).

99 U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)", Table 4, NAICS code 513220 (issued October 2000).

100 In addition, the term "small entity" within SBREFA applies to small organizations (nonprofits) and to small governmental jurisdictions (cities, counties, towns, townships, villages, school districts, and special districts with populations of less than 50,000). 5 U.S.C. §§ 601(4)-(6). We do not collect annual revenue data on ITFS licensees.

101 *See* Local Multipoint Distribution Service, *Second Report and Order*, 12 FCC Rcd 12545 (1997).

102 *Id.*

103 *See* Local Multipoint Distribution Service, *Second Report and Order*, 12 FCC Rcd 12545 (1997).

104 *See* Letter to Dan Phythyon, Chief, Wireless Telecommunications Bureau, FCC, from Aida Alvarez, Administrator, SBA (Jan. 6, 1998).

170 entities winning licenses for 594 Metropolitan Statistical Area (MSA) licenses. Of the 594 licenses, 557 were won by entities qualifying as a small business. For that auction, the small business size standard was an entity that, together with its affiliates, has no more than a $6 million net worth and, after federal income taxes (excluding any carry over losses), has no more than $2 million in annual profits each year for the previous two years.[105] In the *218-219 MHz Report and Order and Memorandum Opinion and Order*, we established a small business size standard for a "small business" as an entity that, together with its affiliates and persons or entities that hold interests in such an entity and their affiliates, has average annual gross revenues not to exceed $15 million for the preceding three years.[106] A "very small business" is defined as an entity that, together with its affiliates and persons or entities that hold interests in such an entity and its affiliates, has average annual gross revenues not to exceed $3 million for the preceding three years.[107] We cannot estimate, however, the number of licenses that will be won by entities qualifying as small or very small businesses under our rules in future auctions of 218-219 MHz spectrum.

41. *24 GHz – Incumbent Licensees.* This analysis may affect incumbent licensees who were relocated to the 24 GHz band from the 18 GHz band, and applicants who wish to provide services in the 24 GHz band. The applicable SBA small business size standard is that of "Cellular and Other Wireless Telecommunications" companies. This category provides that such a company is small if it employs no more than 1,500 persons.[108] According to Census Bureau data for 1997, there were 977 firms in this category, total, that operated for the entire year.[109] Of this total, 965 firms had employment of 999 or fewer employees, and an additional 12 firms had employment of 1,000 employees or more.[110] Thus, under this size standard, the great majority of firms can be considered small. These broader census data notwithstanding, we believe that there are only two licensees in the 24 GHz band that were relocated from the 18

[105] *Implementation of Section 309(j) of the Communications Act – Competitive Bidding*, PP Docket No. 93-253, Fourth Report and Order, 59 Fed. Reg. 24947 (May 13, 1994).

[106] In the Matter of Amendment of Part 95 of the Commission's Rules to Provide Regulatory Flexibility in the 218-219 MHz Service, WT Docket No. 98-169, Report and Order and Memorandum Opinion and Order, 64 Fed.Reg. 59656 (Nov. 3, 1999).

[107] In the Matter of Amendment of Part 95 of the Commission's Rules to Provide Regulatory Flexibility in the 218-219 MHz Service, WT Docket No. 98-169, Report and Order and Memorandum Opinion and Order, 64 Fed.Reg. 59656 (Nov. 3, 1999).

[108] 13 C.F.R. § 121.201, NAICS code 513322 (changed to 517212 in October 2002).

[109] U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Employment Size of Firms Subject to Federal Income Tax: 1997," Table 5, NAICS code 513322 (issued Oct. 2000).

[110] *Id*. The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is "Firms with 1,000 employees or more."

GHz band, Teligent[111] and TRW, Inc. It is our understanding that Teligent and its related companies have less than 1,500 employees, though this may change in the future. TRW is not a small entity. Thus, only one incumbent licensee in the 24 GHz band is a small business entity.

42. *24 GHz – Future Licensees.* With respect to new applicants in the 24 GHz band, the small business size standard for "small business" is an entity that, together with controlling interests and affiliates, has average annual gross revenues for the three preceding years not in excess of $15 million.[112] "Very small business" in the 24 GHz band is an entity that, together with controlling interests and affiliates, has average gross revenues not exceeding $3 million for the preceding three years.[113] The SBA has approved these small business size standards.[114] These size standards will apply to the future auction, if held.

b. Cable and OVS Operators

43. *Cable and Other Program Distribution***.** This category includes cable systems operators, closed circuit television services, direct broadcast satellite services, multipoint distribution systems, satellite master antenna systems, and subscription television services. The SBA has developed small business size standard for this census category, which includes all such companies generating $12.5 million or less in revenue annually.[115] According to Census Bureau data for 1997, there were a total of 1,311 firms in this category, total, that had operated for the entire year.[116] Of this total, 1,180 firms had annual receipts of under $10 million and an additional 52 firms had receipts of $10 million or more but less than $25 million. Consequently, the Commission estimates that the majority of providers in this service category are small businesses that may be affected by the rules and policies adopted herein.

44. *Cable System Operators (Rate Regulation Standard).* The Commission has developed its own small business size standard for cable system operators, for purposes of rate

---

[111] Teligent acquired the DEMS licenses of FirstMark, the only licensee other than TRW in the 24 GHz band whose license has been modified to require relocation to the 24 GHz band.

[112] In the Matter of Amendments to Parts 1,2, 87 and 101 of the Commission's Rules to License Fixed Services at 24 GHz, Report and Order, 15 FCC Rcd 16934, 16967 (2000); see also 47 C.F.R. § 101.538(a)(2).

[113] In the Matter of Amendments to Parts 1,2, 87 and 101 of the Commission's Rules to License Fixed Services at 24 GHz, Report and Order, 15 FCC Rcd 16934, 16967 (2000); see also 47 C.F.R. § 101.538(a)(1).

[114] *See* Letter to Margaret W. Wiener, Deputy Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, FCC, from Gary M. Jackson, Assistant Administrator, SBA (July 28, 2000).

[115] 13 CFR § 121.201, North American Industry Classification System (NAICS) code 513220 (changed to 517510 in October 2002).

[116] U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 513220 (issued October 2000).

regulation. Under the Commission's rules, a "small cable company" is one serving fewer than 400,000 subscribers nationwide.[117] The most recent estimates indicate that there were 1,439 cable operators who qualified as small cable system operators at the end of 1995.[118] Since then, some of those companies may have grown to serve over 400,000 subscribers, and others may have been involved in transactions that caused them to be combined with other cable operators. Consequently, the Commission estimates that there are now fewer than 1,439 small entity cable system operators that may be affected by the rules and policies adopted herein.

45. *Cable System Operators (Telecom Act Standard)***.** The Communications Act of 1934, as amended, also contains a size standard for small cable system operators, which is "a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1 percent of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed $250,000,000."[119] The Commission has determined that there are 67,700,000 subscribers in the United States.[120] Therefore, an operator serving fewer than 677,000 subscribers shall be deemed a small operator, if its annual revenues, when combined with the total annual revenues of all its affiliates, do not exceed $250 million in the aggregate.[121] Based on available data, the Commission estimates that the number of cable operators serving 677,000 subscribers or fewer, totals 1,450.[122] The Commission neither requests nor collects information on whether cable system operators are affiliated with entities whose gross annual revenues exceed $250 million,[123] and therefore are unable, at this time, to estimate more accurately the number of cable system operators that would qualify as small cable operators under the size standard contained in the Communications Act of 1934.

46. *Open Video Services.* Open Video Service (OVS) systems provide subscription

---

[117] 47 CFR § 76.901(e). The Commission developed this definition based on its determination that a small cable system operator is one with annual revenues of $100 million or less. *Implementation of Sections of the 1992 Cable Act: Rate Regulation,* Sixth Report and Order and Eleventh Order on Reconsideration, 10 FCC Rcd 7393 (1995), 60 FR 10534 (Feb. 27, 1995).

[118] Paul Kagan Associates, Inc., *Cable TV Investor*, February 29, 1996 (based on figures for December 30, 1995).

[119] 47 U.S.C. § 543(m)(2).

[120] See FCC Announces New Subscriber Count for the Definition of Small Cable Operator, Public Notice DA 01-158 (Jan. 24, 2001).

[121] 47 CFR § 76.901(f).

[122] See FCC Announces New Subscriber Count for the Definition of Small Cable Operators, Public Notice, DA-01-0158 (rel. January 24, 2001).

[123] The Commission does receive such information on a case-by-case basis if a cable operator appeals a local franchise authority's finding that the operator does not qualify as a small cable operator pursuant to § 76.901(f) of the Commission's rules. *See* 47 CFR § 76.909(b).

services.[124] The SBA has created a small business size standard for Cable and Other Program Distribution.[125] This standard provides that a small entity is one with $12.5 million or less in annual receipts. The Commission has certified approximately 25 OVS operators to serve 75 areas, and some of these are currently providing service.[126] Affiliates of Residential Communications Network, Inc. (RCN) received approval to operate OVS systems in New York City, Boston, Washington, D.C., and other areas. RCN has sufficient revenues to assure that they do not qualify as a small business entity. Little financial information is available for the other entities that are authorized to provide OVS and are not yet operational. Given that some entities authorized to provide OVS service have not yet begun to generate revenues, the Commission concludes that up to 24 OVS operators (those remaining) might qualify as small businesses that may be affected by the rules and policies adopted herein.

c. Internet Service Providers

47. *Internet Service Providers.* The SBA has developed a small business size standard for Internet Service Providers (ISPs). ISPs "provide clients access to the Internet and generally provide related services such as web hosting, web page designing, and hardware or software consulting related to Internet connectivity."[127] Under the SBA size standard, such a business is small if it has average annual receipts of $21 million or less.[128] According to Census Bureau data for 1997, there were 2,751 firms in this category that operated for the entire year.[129] Of these, 2,659 firms had annual receipts of under $10 million, and an additional 67 firms had receipts of between $10 million and $24, 999,999. Consequently, we estimate that the majority of these firms are small entities that may be affected by our action.

d. Other Internet-Related Entities

48. *Web Search Portals.* We note that, in this Notice, we have described activities such as email, online gaming, web browsing, video conferencing, instant messaging, and other, similar IP-enabled services. The Commission has not adopted a size standard for entities that create or provide these types of services or applications. However, the census bureau has

---

[124] *See* 47 U.S.C. § 573.

[125] 13 CFR § 121.201, NAICS code 513220 (changed to 517510 in October 2002).

[126] *See* <http://www.fcc.gov/csb/ovs/csovscer.html> (current as of March 2002).

[127] U.S. Census Bureau, "2002 NAICS Definitions: 518111 Internet Service Providers" (Feb. 2004) <www.census.gov>.

[128] 13 C.F.R. § 121.201, NAICS code 518111 (changed from previous code 514191, "On-Line Information Services," in Oct. 2002).

[129] U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 514191 (issued Oct. 2000).

identified firms that "operate web sites that use a search engine to generate and maintain extensive databases of Internet addresses and content in an easily searchable format. Web search portals often provide additional Internet services, such as e-mail, connections to other web sites, auctions, news, and other limited content, and serve as a home base for Internet users."[130] The SBA has developed a small business size standard for this category; that size standard is $6 million or less in average annual receipts.[131] According to Census Bureau data for 1997, there were 195 firms in this category that operated for the entire year.[132] Of these, 172 had annual receipts of under $5 million, and an additional nine firms had receipts of between $5 million and $9,999,999. Consequently, we estimate that the majority of these firms are small entities that may be affected by our action.

49. *Data Processing, Hosting, and Related Services*. Entities in this category "primarily … provid[e] infrastructure for hosting or data processing services."[133] The SBA has developed a small business size standard for this category; that size standard is $21 million or less in average annual receipts.[134] According to Census Bureau data for 1997, there were 3,700 firms in this category that operated for the entire year.[135] Of these, 3,477 had annual receipts of under $10 million, and an additional 108 firms had receipts of between $10 million and $24,999,999. Consequently, we estimate that the majority of these firms are small entities that may be affected by our action.

50. *All Other Information Services*. "This industry comprises establishments primarily engaged in providing other information services (except new syndicates and libraries and archives)."[136] We note that, in this Notice, we have described activities such as email, online gaming, web browsing, video conferencing, instant messaging, and other, similar IP-enabled services. The SBA has developed a small business size standard for this category; that

---

[130] U.S. Census Bureau, "2002 NAICS Definitions: 518112 Web Search Portals" (Feb. 2004) <www.census.gov>.

[131] 13 C.F.R. § 121.201, NAICS code 518112 (changed from 514199 in Oct. 2002).

[132] U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 514199 (issued Oct. 2000). This category was created for the 2002 Economic Census by taking a portion of the superseded 1997 category, "All Other Information Services," NAICS code 514199. The data cited in the text above are derived from the superseded category.

[133] U.S. Census Bureau, "2002 NAICS Definitions: 518210 Data Processing, Hosting, and Related Services" (Feb. 2004) <www.census.gov>.

[134] 13 C.F.R. § 121.201, NAICS code 518210 (changed from 514210 in Oct. 2002).

[135] U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 514210 (issued Oct. 2000).

[136] U.S. Census Bureau, "2002 NAICS Definitions: 519190 All Other Information Services" (Feb. 2004) <www.census.gov>.

size standard is $6 million or less in average annual receipts.[137] According to Census Bureau data for 1997, there were 195 firms in this category that operated for the entire year.[138] Of these, 172 had annual receipts of under $5 million, and an additional nine firms had receipts of between $5 million and $9,999,999. Consequently, we estimate that the majority of these firms are small entities that may be affected by our action.

51. *Internet Publishing and Broadcasting.* "This industry comprises establishments engaged in publishing and/or broadcasting content on the Internet exclusively. These establishments do not provide traditional (non-Internet) versions of the content that they publish or broadcast."[139] The SBA has developed a small business size standard for this new (2002) census category; that size standard is 500 or fewer employees.[140] To assess the prevalence of small entities in this category, we will use 1997 Census Bureau data for a relevant, now-superseded census category, "All Other Information Services." The SBA small business size standard for that prior category was $6 million or less in average annual receipts. According to Census Bureau data for 1997, there were 195 firms in the prior category that operated for the entire year.[141] Of these, 172 had annual receipts of under $5 million, and an additional nine firms had receipts of between $5 million and $9,999,999. Consequently, we estimate that the majority of the firms in this current category are small entities that may be affected by our action.

52. *Software Publishers.* These companies may design, develop or publish software and may provide other support services to software purchasers, such as providing documentation or assisting in installation. The companies may also design software to meet the needs of specific users. The SBA has developed a small business size standard of $21 million or less in average annual receipts for all of the following pertinent categories: Software Publishers, Custom Computer Programming Services, and Other Computer Related Services.[142] For Software Publishers, Census Bureau data for 1997 indicate that there were 8,188 firms in

---

[137] 13 C.F.R. § 121.201, NAICS code 519190 (changed from 514199 in Oct. 2002).

[138] U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 514199 (issued Oct. 2000). This category was created for the 2002 Economic Census by taking a portion of the superseded 1997 category, "All Other Information Services," NAICS code 514199. The data cited in the text above are derived from the superseded category.

[139] U.S. Census Bureau, "2002 NAICS Definitions: 516110 Internet Publishing and Broadcasting" (Feb. 2004) <www.census.gov>.

[140] 13 C.F.R. § 121.201, NAICS code 516110 (derived from 514199 and other 1997 codes).

[141] U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 514199 (issued Oct. 2000). This category was created for the 2002 Economic Census by taking portions of numerous 1997 categories.

[142] 13 C.F.R. § 121.201, NAICS codes 511210, 541511, and 541519.

the category that operated for the entire year.[143] Of these, 7,633 had annual receipts under $10 million, and an additional 289 firms had receipts of between $10 million and $24, 999,999. For providers of Custom Computer Programming Services, the Census Bureau data indicate that there were 19,334 firms that operated for the entire year.[144] Of these, 18,786 had annual receipts of under $10 million, and an additional 352 firms had receipts of between $10 million and $24,999,999. For providers of Other Computer Related Services, the Census Bureau data indicate that there were 5,524 firms that operated for the entire year.[145] Of these, 5,484 had annual receipts of under $10 million, and an additional 28 firms had receipts of between $10 million and $24,999,999. Consequently, we estimate that the majority of the firms in each of these three categories are small entities that may be affected by our action.

e. Equipment Manufacturers

53. In section V.B.1 of this Notice, we invite comment on whether the disability access provisions of sections 255 and 252(a)(2) of the Act, as well as the Commission's Rules implementing these statutes in the *Disability Access Order*, apply in the context of VoIP and other IP-enabled services. Section V.B.1 notes that sections 255 and 252(a)(2) and the Commission's implementing rules apply to manufacturers of equipment that the Act and the rules deem covered by the provisions.[146] The Commission currently does not collect data regarding how many, or which, companies manufacture such equipment. Thus, out of an abundance of caution, we have perhaps been over-inclusive in creating the following list of possibly covered entities. Again, commenters are invited to comment on these categories and on the possible number of small entities within these categories.

54. *Wireless Communications Equipment Manufacturers*. The SBA has established a small business size standard for Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing. Examples of products in this category include "transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment"[147] and may include other devices that transmit and receive IP-enabled

[143] U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 511210 (issued Oct. 2000).

[144] U.S. Census Bureau, 1997 Economic Census, Subject Series: Professional, Scientific, and Technical Services, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4a, NAICS code 541511 (issued Oct. 2000).

[145] U.S. Census Bureau, 1997 Economic Census, Subject Series: Professional, Scientific, and Technical Services, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4a, NAICS code 541519 (issued Oct. 2000).

[146] *See* Notice section V.B.1.

[147] Office of Management and Budget, North American Industry Classification System 308-09 (1997) (NAICS code 334220).

services, such as personal digital assistants (PDAs). Under the SBA size standard, firms are considered small if they have 750 or fewer employees.[148] According to Census Bureau data for 1997, there were 1,215 establishments[149] in this category that operated for the entire year.[150] Of those, there were 1,150 that had employment of under 500, and an additional 37 that had employment of 500 to 999. The percentage of wireless equipment manufacturers in this category was approximately 61.35%,[151] so we estimate that the number of wireless equipment manufacturers with employment of under 500 was actually closer to 706, with and additional 23 establishments having employment of between 500 and 999. Consequently, we estimate that the majority of wireless communications equipment manufacturers are small entities that may be affected by our action.

55. *Telephone Apparatus Manufacturing.* This category "comprises establishments primarily engaged primarily in manufacturing wire telephone and data communications equipment."[152] Examples of pertinent products are "central office switching equipment, cordless telephones (except cellular), PBX equipment, telephones, telephone answering machines, and data communications equipment, such as bridges, routers, and gateways."[153] The SBA has developed a small business size standard for this category of manufacturing; that size standard is 1,000 or fewer employees.[154] According to Census Bureau data for 1997, there were 598 establishments in this category that operated for the entire year.[155] Of these, 574 had employment of under 1,000, and an additional 17 establishments had employment of 1,000 to 2,499. Consequently, we estimate that the majority of these establishments are small entities that may be affected by our action.

---

[148] 13 C.F.R. § 121.201, NAICS code 334220.

[149] The number of "establishments" is a less helpful indicator of small business prevalence in this context than would be the number of "firms" or "companies," because the latter take into account the concept of common ownership or control. Any single physical location for an entity is an establishment, even though that location may be owned by a different establishment. Thus, the numbers given may reflect inflated numbers of businesses in this category, including the numbers of small businesses. In this category, the Census breaks-out data for firms or companies only to give the total number of such entities for 1997, which were 1,089.

[150] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Industry Statistics by Employment Size," Table 4, NAICS code 334220 (issued Aug. 1999).

[151] *Id*. Table 5.

[152] Office of Management and Budget, North American Industry Classification System 308 (1997) (NAICS code 334210).

[153] *Id*.

[154] 13 C.F.R. § 121.201, NAICS code 334210.

[155] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Telephone Apparatus Manufacturing," Table 4, NAICS code 334210 (issued Sept. 1999).

56. *Electronic Computer Manufacturing.* This category "comprises establishments primarily engaged in manufacturing and/or assembling electronic computers, such as mainframes, personal computers, workstations, laptops, and computer servers."[156] The SBA has developed a small business size standard for this category of manufacturing; that size standard is 1,000 or fewer employees.[157] According to Census Bureau data for 1997, there were 563 establishments in this category that operated for the entire year.[158] Of these, 544 had employment of under 1,000, and an additional 11 establishments had employment of 1,000 to 2,499. Consequently, we estimate that the majority of these establishments are small entities that may be affected by our action.

57. *Computer Terminal Manufacturing*. "Computer terminals are input/output devices that connect with a central computer for processing."[159] The SBA has developed a small business size standard for this category of manufacturing; that size standard is 1,000 or fewer employees.[160] According to Census Bureau data for 1997, there were 142 establishments in this category that operated for the entire year, and all of the establishments had employment of under 1,000.[161] Consequently, we estimate that the majority or all of these establishments are small entities that may be affected by our action.

58. *Other Computer Peripheral Equipment Manufacturing.* Examples of peripheral equipment in this category include keyboards, mouse devices, monitors, and scanners.[162] The SBA has developed a small business size standard for this category of manufacturing; that size standard is 1,000 or fewer employees.[163] According to Census Bureau data for 1997, there were 1061 establishments in this category that operated for the entire year.[164] Of these, 1,046 had

[156] Office of Management and Budget, North American Industry Classification System 306 (1997) (NAICS code 334111).

[157] 13 C.F.R. § 121.201, NAICS code 334111.

[158] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Electronic Computer Manufacturing," Table 4, NAICS code 334111 (issued Aug. 1999).

[159] Office of Management and Budget, North American Industry Classification System 307 (1997) (NAICS code 334113).

[160] 13 C.F.R. § 121.201, NAICS code 334113.

[161] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Computer Terminal Manufacturing," Table 4, NAICS code 334113 (issued Aug. 1999).

[162] Office of Management and Budget, North American Industry Classification System 307-08 (1997) (NAICS code 334119).

[163] 13 C.F.R. § 121.201, NAICS code 334119.

[164] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Other Computer Peripheral Equipment Manufacturing," Table 4, NAICS code 334119 (issued Aug. 1999).

employment of under 1,000, and an additional six establishments had employment of 1,000 to 2,499. Consequently, we estimate that the majority of these establishments are small entities that may be affected by our action.

59. *Fiber Optic Cable Manufacturing.* These establishments manufacture "insulated fiber-optic cable from purchased fiber-optic strand."[165] The SBA has developed a small business size standard for this category of manufacturing; that size standard is 1,000 or fewer employees.[166] According to Census Bureau data for 1997, there were 38 establishments in this category that operated for the entire year.[167] Of these, 37 had employment of under 1,000, and one establishment had employment of 1,000 to 2,499. Consequently, we estimate that the majority of these establishments are small entities that may be affected by our action.

60. *Other Communication and Energy Wire Manufacturing.* These establishments manufacture "insulated wire and cable of nonferrous metals from purchased wire."[168] The SBA has developed a small business size standard for this category of manufacturing; that size standard is 1,000 or fewer employees.[169] According to Census Bureau data for 1997, there were 275 establishments in this category that operated for the entire year.[170] Of these, 271 had employment of under 1,000, and four establishments had employment of 1,000 to 2,499. Consequently, we estimate that the majority or all of these establishments are small entities that may be affected by our action.

61. *Audio and Video Equipment Manufacturing.* These establishments manufacture "electronic audio and video equipment for home entertainment, motor vehicle, public address and musical instrument amplifications."[171] The SBA has developed a small business size standard for this category of manufacturing; that size standard is 750 or fewer employees.[172]

---

[165] Office of Management and Budget, North American Industry Classification System 330 (1997) (NAICS code 335921).

[166] 13 C.F.R. § 121.201, NAICS code 335921.

[167] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Fiber Optic Cable Manufacturing," Table 4, NAICS code 335921 (issued Nov. 1999).

[168] Office of Management and Budget, North American Industry Classification System 331 (1997) (NAICS code 335929).

[169] 13 C.F.R. § 121.201, NAICS code 335929.

[170] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Other Communication and Energy Wire Manufacturing," Table 4, NAICS code 335929 (issued Nov. 1999).

[171] U.S. Census Bureau, "2002 NAICS Definitions: 334310 Audio and Video Equipment Manufacturing" (Feb. 2004) <www.census.gov>.

[172] 13 C.F.R. § 121.201, NAICS code 334310.

According to Census Bureau data for 1997, there were 554 establishments in this category that operated for the entire year.[173] Of these, 542 had employment of under 500, and nine establishments had employment of 500 to 999. Consequently, we estimate that the majority of these establishments are small entities that may be affected by our action.

62. *Electron Tube Manufacturing.* These establishments are "primarily engaged in manufacturing electron tubes and parts (except glass blanks)."[174] The SBA has developed a small business size standard for this category of manufacturing; that size standard is 750 or fewer employees.[175] According to Census Bureau data for 1997, there were 158 establishments in this category that operated for the entire year.[176] Of these, 148 had employment of under 500, and three establishments had employment of 500 to 999. Consequently, we estimate that the majority of these establishments are small entities that may be affected by our action.

63. *Bare Printed Circuit Board Manufacturing.* These establishments are "primarily engaged in manufacturing bare (i.e., rigid or flexible) printed circuit boards without mounted electronic components."[177] The SBA has developed a small business size standard for this category of manufacturing; that size standard is 500 or fewer employees.[178] According to Census Bureau data for 1997, there were 1,389 establishments in this category that operated for the entire year.[179] Of these, 1,369 had employment of under 500, and 16 establishments had employment of 500 to 999. Consequently, we estimate that the majority of these establishments are small entities that may be affected by our action.

64. *Semiconductor and Related Device Manufacturing.* These establishments manufacture "computer storage devices that allow the storage and retrieval of data from a phase change, magnetic, optical, or magnetic/optical media."[180] The SBA has developed a small

[173] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Audio and Video Equipment Manufacturing," Table 4, NAICS code 334310 (issued Aug. 1999).

[174] U.S. Census Bureau, "2002 NAICS Definitions: 334411 Electron Tube Manufacturing" (Feb. 2004) <www.census.gov>.

[175] 13 C.F.R. § 121.201, NAICS code 334411.

[176] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Electron Tube Manufacturing," Table 4, NAICS code 334411 (issued July 1999).

[177] U.S. Census Bureau, "2002 NAICS Definitions: 334412 Bare Printed Circuit Board Manufacturing" (Feb. 2004) <www.census.gov>.

[178] 13 C.F.R. § 121.201, NAICS code 334412.

[179] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Bare Printed Circuit Board Manufacturing," Table 4, NAICS code 334412 (issued Aug. 1999).

[180] U.S. Census Bureau, "2002 NAICS Definitions: 334413 Semiconductor and Related Device Manufacturing" (Feb. 2004) <www.census.gov>.

business size standard for this category of manufacturing; that size standard is 500 or fewer employees.[181] According to Census Bureau data for 1997, there were 1,082 establishments in this category that operated for the entire year.[182] Of these, 987 had employment of under 500, and 52 establishments had employment of 500 to 999.

65. *Electronic Capacitor Manufacturing.* These establishments manufacture "electronic fixed and variable capacitors and condensers."[183] The SBA has developed a small business size standard for this category of manufacturing; that size standard is 500 or fewer employees.[184] According to Census Bureau data for 1997, there were 128 establishments in this category that operated for the entire year.[185] Of these, 121 had employment of under 500, and four establishments had employment of 500 to 999.

66. *Electronic Resistor Manufacturing.* These establishments manufacture "electronic resistors, such as fixed and variable resistors, resistor networks, thermistors, and varistors."[186] The SBA has developed a small business size standard for this category of manufacturing; that size standard is 500 or fewer employees.[187] According to Census Bureau data for 1997, there were 118 establishments in this category that operated for the entire year.[188] Of these, 113 had employment of under 500, and 5 establishments had employment of 500 to 999.

67. *Electronic Coil, Transformer, and Other Inductor Manufacturing.* These establishments manufacture "electronic inductors, such as coils and transformers."[189] The SBA has developed a small business size standard for this category of manufacturing; that size

[181] 13 C.F.R. § 121.201, NAICS code 334413.

[182] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Semiconductor and Related Device Manufacturing ," Table 4, NAICS code 334413 (issued July 1999).

[183] U.S. Census Bureau, "2002 NAICS Definitions: 334414 Electronic Capacitor Manufacturing" (Feb. 2004) <www.census.gov>.

[184] 13 C.F.R. § 121.201, NAICS code 334414.

[185] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Electronic Capacitor Manufacturing," Table 4, NAICS code 334414 (issued July 1999).

[186] U.S. Census Bureau, "2002 NAICS Definitions: 334415 Electronic Resistor Manufacturing" (Feb. 2004) <www.census.gov>.

[187] 13 C.F.R. § 121.201, NAICS code 334415.

[188] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Electronic Resistor Manufacturing," Table 4, NAICS code 334415 (issued Aug. 1999).

[189] U.S. Census Bureau, "2002 NAICS Definitions: 334416 Electronic Coil, Transformer, and Other Inductor Manufacturing" (Feb. 2004) <www.census.gov>.

standard is 500 or fewer employees.[190] According to Census Bureau data for 1997, there were 448 establishments in this category that operated for the entire year.[191] Of these, 446 had employment of under 500, and two establishments had employment of 500 to 999.

68. *Electronic Connector Manufacturing.* These establishments manufacture "electronic connectors, such as coaxial, cylindrical, rack and panel, pin and sleeve, printed circuit and fiber optic."[192] The SBA has developed a small business size standard for this category of manufacturing; that size standard is 500 or fewer employees.[193] According to Census Bureau data for 1997, there were 347 establishments in this category that operated for the entire year.[194] Of these, 332 had employment of under 500, and 12 establishments had employment of 500 to 999.

69. *Printed Circuit Assembly (Electronic Assembly) Manufacturing.* These are establishments "primarily engaged in loading components onto printed circuit boards or who manufacture and ship loaded printed circuit boards."[195] The SBA has developed a small business size standard for this category of manufacturing; that size standard is 500 or fewer employees.[196] According to Census Bureau data for 1997, there were 714 establishments in this category that operated for the entire year.[197] Of these, 673 had employment of under 500, and 24 establishments had employment of 500 to 999.

70. *Other Electronic Component Manufacturing.* These are establishments "primarily engaged in loading components onto printed circuit boards or who manufacture and ship loaded printed circuit boards."[198] The SBA has developed a small business size standard

---

[190] 13 C.F.R. § 121.201, NAICS code 334416.

[191] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Electronic Coil, Transformer, and Other Inductor Manufacturing," Table 4, NAICS code 334416 (issued Aug. 1999).

[192] U.S. Census Bureau, "2002 NAICS Definitions: 334417 Electronic Connector Manufacturing" (Feb. 2004) <www.census.gov>.

[193] 13 C.F.R. § 121.201, NAICS code 334417.

[194] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Electronic Connector Manufacturing," Table 4, NAICS code 334417 (issued July 1999).

[195] U.S. Census Bureau, "2002 NAICS Definitions: 334418 Printed Circuit Assembly (Electronic Assembly) Manufacturing" (Feb. 2004) <www.census.gov>.

[196] 13 C.F.R. § 121.201, NAICS code 334418.

[197] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Printed Circuit Assembly (Electronic Assembly) Manufacturing," Table 4, NAICS code 334418 (issued Sept. 1999).

[198] U.S. Census Bureau, "2002 NAICS Definitions: 334419 Other Electronic Component Manufacturing" (Feb. 2004) <www.census.gov>.

for this category of manufacturing; that size standard is 500 or fewer employees.[199] According to Census Bureau data for 1997, there were 1,835 establishments in this category that operated for the entire year.[200] Of these, 1,814 had employment of under 500, and 18 establishments had employment of 500 to 999.

71. *Computer Storage Device Manufacturing.* These establishments manufacture "computer storage devices that allow the storage and retrieval of data from a phase change, magnetic, optical, or magnetic/optical media."[201] The SBA has developed a small business size standard for this category of manufacturing; that size standard is 1,000 or fewer employees.[202] According to Census Bureau data for 1997, there were 209 establishments in this category that operated for the entire year.[203] Of these, 197 had employment of under 500, and eight establishments had employment of 500 to 999

4. Description of Projected Reporting, Recordkeeping and Other Compliance Requirements

72. None at this time.

5. Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered

73. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include (among others) the following four alternatives: (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.[204]

74. The Notice expressly states that the Commission may ultimately need to

---

[199] 13 C.F.R. § 121.201, NAICS code 334419.

[200] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Other Electronic Component Manufacturing," Table 4, NAICS code 334419 (issued Aug. 1999).

[201] U.S. Census Bureau, "2002 NAICS Definitions: 334112 Computer Storage Device Manufacturing" (Feb. 2004) <www.census.gov>.

[202] 13 C.F.R. § 121.201, NAICS code 334112.

[203] U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Computer Storage Device Manufacturing," Table 4, NAICS code 334112 (issued July 1999).

[204] 5 U.S.C. § 603(c).

differentiate among various IP-enabled services, and that regulation may be deemed inappropriate with regard to most, if not all, IP-enabled services, applications or providers. It thus seeks comment on the appropriate grounds on which to differentiate among providers of IP-enabled services. The Notice further seeks comment on the appropriate legal classification for each category of IP-enabled services, and on which regulatory requirements, if any, should be applied to services falling into each category. The Notice makes no conclusions regarding which regulations, if any, would apply to any entity, including small entities. We seek comment here on the effect various proposals will have on small entities, and on the effect alternative rules would have on those entities.

6. Federal Rules that May Duplicate, Overlap, or Conflict with the Proposed Rules

75. None.

STATEMENT OF
CHAIRMAN MICHAEL K. POWELL

Re: IP-Enabled Services, WC Docket No. 04-36.

More than two decades ago, the Commission made the courageous decision to fence off information services – the precursors of today's internet – from traditional monopoly regulation. This approach was embraced by Congress in that 1996 Act. The Commission's pro-competitive and deregulatory policies allowed competition to flourish and helped usher in a period of growth and innovation unlike any other in our nation's history. Today, we issue an item that follows in that tradition of fostering innovation and consumer choice. The item recognizes that we have entered an Age of Personal Communications. IP-enabled services and the proliferation of IP devices enable consumers to increasingly choose innovative, personalized Internet applications and content.

As new and innovative ways to communicate have emerged, so too have calls for us to examine the appropriate public policy for highly innovative, highly efficient services based on Internet Protocol. In this comprehensive Notice of Proposed Rulemaking, we seek comment on how applications that use IP are changing our communications network and the very assumptions on which our current regulatory policies are based.

Our starting point – and our most important finding – is the recognition that all IP-enabled services exist in a dynamic, fast-changing environment that is peculiarly ill-suited to the century old telephone model of regulation. Competitive market forces, rather than prescriptive rules, will respond to public need much more quickly and more effectively than even the best intentioned responses of government regulators. Indeed, our best hope for continuing the investment, innovation, choice and competition that characterizes Internet services today lies in limiting to a minimum the labyrinth of regulations and fees that apply to the Internet. All too often, these edicts can thwart competition even among traditional telecommunications providers.

While IP-enabled services should remain free from traditional monopoly regulation, rules designed to ensure law enforcement access, universal service, disability access, and emergency 911 service can and should be preserved in the new architecture. In today's Notice, we seek comment on whether and how to apply discrete regulatory requirements where necessary to fulfill important federal policy objectives.

Above all, law enforcement access to IP-enabled communications is essential. The Communications Assistance for Law Enforcement Act (CALEA) requires telecommunications carriers to ensure that their equipment is capable of providing surveillance capabilities to law enforcement agencies. CALEA requirements can and should apply to VoIP and other IP enabled service providers, even if these services are "information services" for purposes of the Communications Act. Nothing in today's proceeding should be read to suggest that law enforcement agencies should not have the access to communications infrastructure they need to protect our nation. On the contrary, all IP-enabled services should consider the needs of law

enforcement as they continue to develop innovative technologies. Nevertheless, the technical issues associated with law-enforcement access to VoIP communications are both novel and complex, and, ultimately, worthy of their own separately docketed proceeding. To address these issues, we intend to initiate a CALEA rulemaking proceeding in the near future. The new proceeding will address the scope of covered services, assign responsibility for compliance, identify the wiretap capabilities required by law enforcement and provide acceptable compliance standards.

IP networks cost much less to build and operate. As in so many other areas, I believe VoIP can help control high universal service costs in order to ensure that every American has affordable telephone service. As the item notes, however, IP services ride atop a physical layer that, in many areas, is still expensive to build and maintain. To continue to ensure the entire nation has access to vital communications services, the NPRM considers distinguishing service providers that offer interconnection with the nation's public switched telephone network from those that do not. To determine the precise scope of support obligations in the new IP world, today's action quite properly seeks comment on a number of complex funding questions. Yet it does not – and cannot – change the existing obligations of providers to comply with our rules, especially our rules requiring providers of traditional long distance services to pay fair compensation for using the public switched telephone network. During and after the transition to next generations communications networks, the Commission can and will fulfill its statutory obligation to ensure that every American has access to the network at an affordable price.

As we move forward, the Commission will also hold a series of "Solutions Summits" to tackle how a VoIP provider can best respond to the needs of various communities where the market may not readily respond. We will be asking leaders in the law-enforcement, first-responder and disabled communities to come together to talk about creative ways to address some of these issues. It is my hope that industry can take the lead in solving some of the real problems that stem from the migration from the monopoly analog world to the competitive new digital world of communications. If leaders from industry and the government work together to identify issues, study them and stay vigilant, we can rely on enterprise and entrepreneurship to respond to many public needs. Our first "Solutions Summits" will be held on March 18 and will address E911 issues.

Today's notice recognizes that we simply cannot contort the character of the Internet to suit our familiar notions of regulation. We will not dumb down the genius of the web to match the limited vision of a regulator. At the same time, we remain committed to making special efforts to target those areas most in need of public protection. Working together, we will ensure that the promise of these new innovative technologies and services is realized for all Americans.

STATEMENT OF
COMMISSIONER KATHLEEN Q. ABERNATHY

Re: IP-Enabled Services, WC Docket No. 04-36.

With this NPRM, the Commission launches an inquiry into a revolutionary set of services and applications. We stand at the threshold of a profound transformation of the telecommunications marketplace, as the circuit-switching technology of yesteryear is rapidly giving way to IP-based communications. In the IP world, voice communications, once restricted to a dedicated, specialized network, represent but one application — one species of bits — provided alongside many others. Although I firmly believe that prescriptive regulation in many instances will prove unnecessary, I strongly support this effort to develop an appropriate regulatory framework. Indeed, it may seem paradoxical but it is undoubtedly true that we can ensure freedom from regulation only if we commence a regulatory proceeding.

While it is premature to say precisely what this framework will look like, there is no question that the time is right for the Commission to build a record. As service providers are developing business plans and courts and state commissions are starting to reach potentially divergent conclusions about the rules of the road, the risks of inaction are great. This Commission must step forward and provide guidance, or providers may be subject to a patchwork of inconsistent rules. The promise of IP-enabled services is too great to risk such an outcome.

As we conduct this rulemaking, I will keep an open mind but at the same time I will be guided by some overarching predispositions. *First*, I believe that the regulatory framework for IP-based services must be predominantly federal. A federal scheme will facilitate nationwide deployment strategies and avoid the burdens associated with inconsistent state rules. Moreover, most forms of IP communications appear to transcend jurisdictional boundaries, rendering obsolete the traditional separation of services into interstate and intrastate buckets. *Second*, I am deeply skeptical about the application of economic regulation to these nascent services. Public-utility regulations have traditionally been imposed on local exchange carriers to restrain their market power. Services such as VOIP, by contrast, appear to have low barriers to entry and it does not appear that any provider occupies a dominant market position. Rather than reflexively extending our legacy regulations to VOIP providers, we need to take this opportunity to step back and ascertain whether those rules still make sense for *any* providers, including incumbents. *Third*, notwithstanding my interest in maintaining a light touch, I am committed to ensuring that our regulatory approach meets certain critical social policy objectives. As most policymakers at the federal and state level have recognized, we will need to find solutions to guarantee access to 911 services, the ability of law enforcement agencies to conduct surveillance, the preservation of universal service, and access by persons with disabilities. Some of these goals may well be achieved without heavy-handed regulation, but I am willing to support targeted governmental mandates where necessary.

Finally, although the NPRM appropriately refrains from proposing actual service categories and classifications at this early stage, I strongly support taking action to clarify the existing state of the law. The NPRM asks many broad questions about the regime we will establish at the

conclusion of this rulemaking, but we plainly have rules on the books *today* — rules concerning interstate access charges and universal service contributions, among other things — that appear to apply to some services offered in the marketplace. Providers have filed petitions for declaratory rulings because clarity is sorely needed: most notably, some interexchange carriers are paying access charges for terminating so-called phone-to-phone IP calls, whereas some are not. This disparity distorts competition as well as the flow of capital. In an upcoming order or orders, I urge my colleagues to provide as much clarity as possible regarding our existing rules in the interest of our shared goal of promoting regulatory certainty.

CONCURRING STATEMENT OF
COMMISSIONER MICHAEL J. COPPS

Re: IP-Enabled Services, WC Docket No. 04-36.

After two years of dialogue on classifying, reclassifying and declassifying services, in this proceeding the Commission finally focuses on the consequences of a Title I approach on a whole range of public safety, emergency response, universal service and disabilities access policies that we have a duty to protect. I have long advocated that we do this.

But I limit my support to concurring here because this proceeding on IP-enabled services strikes me as getting rather too close to final conclusions. In this Notice, we seem to be judging IP-related services without defining them. We ask questions about how to classify these ill-defined services, but then presume, or at least suggest, the answers. The impression is left that we are asking what rules we should apply ***when*** we relocate whole services and technologies to Title I from Title II. Were we eventually to take this route, we would be rewriting the 1996 Act—from top to bottom. This agency has no right to substitute its reclassification wishes for the will of Congress.

So I will support this Notice only with the understanding that, once we have a full record, our options remain completely open.

We all marvel at the transformative potential of new IP services. They sizzle with possibility for consumers and businesses alike. But for this transformation to happen with real spark, we need keep some fundamentals in mind. For example, we need to address intercarrier compensation to create a level playing field that minimizes arbitrages and maximizes the opportunities for new technologies to flourish. And we must recognize the role that universal service will play to make sure that all areas of the nation are covered with the technologies to create a seamless communications system and a seamless country. IP applications will only revolutionize communications if everyone has access to really high capacity bandwidth. Only when everyone, everywhere in America has access to broadband, will the IP transformation we herald here really take place.

STATEMENT OF
COMMISSIONER KEVIN J. MARTIN

Re: IP-Enabled Services, WC Docket No. 04-36.

I am glad that the Commission is moving forward today with a Notice of Proposed Rulemaking to address and clarify the regulatory status of Voice over Internet Protocol (VoIP) and Internet Protocol (IP)-enabled services. Today's NPRM recognizes the benefits that VoIP brings such as greater efficiency and that the Commission will approach VoIP with a light regulatory touch.

VoIP and IP based services will provide consumers with personalized applications and content resulting in more competition and greater choice. These IP services have the potential to spur further innovation and help drive the ubiquitous deployment of broadband and IP networks that will bring even greater benefits to consumers in the future.

As I have stated previously, as VoIP services move toward becoming a substitute for traditional telephony services, we need to carefully consider and address any questions and concerns regarding the obligations to provide traditional public safety services such as 911 and the ability to comply with law enforcement requirements. I thus support today's announcement that the Commission will soon initiate a comprehensive rulemaking to address law enforcement's needs relative to CALEA and that our decision today will not prejudice the outcome of that proceeding.

Today's decision, however, also raises many of the difficult questions that arise regarding VoIP's potential to displace traditional telephony services. I encourage all interest parties to comment on these issues. In particular, I will look with great interest, at how we should address many of the important public safety, law enforcement and consumer protection functions in a VoIP world.

I am also pleased that today's item recognizes the many different types of VoIP service offerings that currently exist, and that may potentially develop in the marketplace. The NPRM acknowledges that VoIP offerings, at times, may or may not need to use the public switch network ("PSTN") and asks how we should take their key distinctions into account. The item also makes clear that functionally equivalent services should be subject to similar obligations and that the cost of the PSTN should be born equitably among those that use it in similar ways.

As we move forward, we must ensure that our policies treat similar services in a similar fashion and that we do not create a regulatory framework that promotes potential arbitrage opportunities.

STATEMENT OF COMMISSIONER JONATHAN S. ADELSTEIN APPROVING IN PART AND CONCURRING IN PART

Re: IP-Enabled Services, WC Docket No. 04-36.

Re: Petition for Declaratory Ruling that pulver.com's Free World Dialup is Neither Telecommunications Nor a Telecommunications Service, Memorandum Opinion and Order, WC Docket No. 03-45.

Today, we consider two items – a comprehensive Notice of Proposed Rulemaking and a declaratory ruling on a specific service – related to Voice over Internet Protocol (VoIP) and Internet Protocol (IP)-enabled services.

NPRM

With this Notice, we examine the extent and legal significance of the telecommunications industry's growing adoption of IP-enabled services. This technological evolution stems from the development of a common digital protocol, the "IP" in "VoIP." It is integral to an explosion of choices for consumers, such as phones in PDAs, voice through Instant Messaging-like services, not to mention lower prices on the services we are accustomed to. I am struck by the wealth of innovation occurring under the banner of "VoIP." As a consumer, I think we all have much to look forward to.

As a Commissioner, I think we take an important and responsible step today by opening a comprehensive Notice of Proposed Rulemaking on the regulatory issues associated with IP-enabled services. VoIP services have matured recently and it is apparent that VoIP providers have their sights set on that most mainstream of telecommunications markets – the residential consumer. VoIP providers point out that their services have the potential to provide a rich and diverse array of complementary non-voice applications that will stir demand. All indications are that IP is becoming the building block for the future of telecommunications.

Questions about what this evolution means for consumers, providers, and this Commission are far from simple. What they present, though, is an opportunity – indeed a necessity – for this Commission to facilitate that evolution. Today's items herald the Commission's role in promoting innovative technologies. At the same time, though, we are charged under the Communications Act with ensuring that the goals set out by Congress are fulfilled. Forging the right regulatory scheme to achieve these goals is our task and it is fundamental that we begin to wrestle with these issues in earnest.

I would like to thank Chairman Powell for his leadership on VoIP. The Chairman convened a forum on these issues in December that I found extremely useful. I have also appreciated his willingness to engage his colleagues in the deliberations over these items. We do not agree on every detail about how to move forward, but I appreciate his willingness to accommodate so many of my concerns as we start this larger rulemaking.

I fully expect that this Notice will allow us to develop a comprehensive record about the development of IP-enabled services. Chief among our tasks is to determine how the adoption of IP-enabled services affects those most fundamental telecommunications policies embodied in the Communications Act. The Act charges us to maintain universal service, which is crucial in delivering communications services to our nation's schools, libraries, low income consumers, and rural communities. We will need to look closely at how IP-enabled services affect our ability to fund and deliver those services. The support that our universal service programs bring to our nation's rural communities is critical, so I am particularly glad that this Notice seeks direct comment on issues of concern to Rural America.

As we go forward, we also must understand how IP-enabled services will affect the provision of 911, E911, and other emergency services; the ability of people with disabilities to access communications services; the application of our consumer protection laws; the ability of our law enforcement officials to rely on CALEA to protect public safety and national security; and other national priorities such as consumer privacy and network reliability. We must understand that our decisions can have disparate impact on particular communities. We raise many issues in today's NPRM, and we will need to reach out to the many and diverse interests of consumers, network providers of all types, hardware and software manufacturers, and federal, state and local policymakers.

I agree with my colleagues that there may be some questions that we need to answer about the regulation of VoIP services sooner rather than later. There are time sensitive issues on the table for us, such as the erosion of the base of support for universal service. This Commission has not hesitated in the past to address issues of regulatory arbitrage, and I think that we will have to look closely and quickly at some of the concerns that have been brought to our attention.

Pulver.com

In approaching these monumental tasks, however, I am concerned that we not get too far ahead of our record. The rapid and dynamic pace of the migration to IP and broadband services counsels for a full consideration of the issues wherever possible.

Many persuasive arguments were made as to why Pulver.com's Free World Dialup (FWD) is not telecommunications or a telecommunications service. I concur that this service is not telecommunications or a telecommunications service and in practice should remain largely unregulated. In particular, the peer-to-peer nature of FWD differs in significant respects from traditional "telecommunications services" that traditional phone companies have offered. However, I cannot fully join today's pulver.com Order because it reaches far beyond the petition filed by pulver.com and, regrettably, speaks prematurely to many of the important questions raised in today's NPRM.

Despite attempts to characterize this Order as limited to the specific facts of pulver.com's FWD, I am concerned that the decision speaks much more expansively. By deciding the statutory classification of pulver.com's service as an interstate information service, the Order raises a host of questions about the continuing relevance of those most fundamental

telecommunications policy objectives that Congress has entrusted to this Commission. At last December's VoIP forum, I talked about these concerns and was struck by how widely-held those concerns seemed to be.

Today's Order does not fully address these widely-acknowledged concerns. One might read this Order as silent on many of these ultimate issues, which strikes me as curiously dismissive given the magnitude of the responsibilities entrusted to us. Parsing more closely, the declarations about jurisdiction and the "unregulated" nature of the service seem to presume the outcome of the very rulemaking we launch today. Pulver.com's petition did not request a ruling on the appropriate jurisdictional classification, and many parties may be unaware that we planned to reach that question in this Order. With both the jurisdictional finding and the unaddressed implications of the statutory classification, I would have preferred that we defer these important policy considerations until the Commission has a more comprehensive record with the benefit of the participation of the many stakeholders who should be part of this debate.

One area where we did have participation was in the critical area of law enforcement. Legitimate concerns were raised by the Federal Bureau of Investigation and the Department of Justice. While the Department of Justice has acquiesced to the desire to open this inquiry, its clearly stated preference was to resolve CALEA matters as soon as possible. While I dissented from today's ruling that FWD is an information service, I am pleased that we commit to opening a CALEA proceeding very soon, and that the Justice Department has not objected to our moving forward in the interim.

For these reasons, I can only concur in part and dissent in part on the pulver.com Order and thus I can only concur in those portions of the NPRM where that item imports this overreaching analysis.

Finally, I would like to thank the Wireline Competition Bureau, and in particular, the Competition Policy Division. Bureau staff members, as well as my own staff, have spent countless hours and long nights working through complex issues. They are truly public servants of the highest caliber.