

Before the
Federal Communications Commission
Washington DC 20054

In the Matter of)	
)	
Inquiry Concerning the Deployment of)	
Advanced Telecommunications)	
Capability to All Americans in a Reasonable)	GN Docket No. 04-54
and Timely Fashion, and Possible Steps)	
to Accelerate Such Deployment)	
Pursuant to Section 706 of the)	
Telecommunications Act of 1996)	

NOTICE OF INQUIRY

Adopted: March 11, 2004

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Comment Date: 30 days from publication in the Federal Register
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By the Commission: Chairman Powell and Commissioners Abernathy, Copps, and Adelstein issuing separate statements.

I. INTRODUCTION

1. This Notice of Inquiry (Notice) begins our fourth inquiry under section 706 of the Telecommunications Act of 1996 (the 1996 Act) into “whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.”¹ We seek comment on various market, investment, and technological trends in order for the Commission to analyze and assess whether infrastructure capable of supporting advanced services is being made available to all Americans.

2. In section 706, Congress directed the Commission and the states to encourage the deployment of advanced telecommunications capability to all Americans.² In conjunction with this objective, Congress instructed this Commission to conduct regular inquiries concerning the availability of advanced telecommunications capability. In so doing, Congress recognized that the availability of infrastructure capable of transmitting broadband or advanced services was

¹ See § 706(b) of the Telecommunications Act of 1996, Pub. L. 104-104, 110 Stat. 56 (1996) (1996 Act), reproduced in the notes under 47 U.S.C. § 157.

² Congress specified that the term “advanced telecommunications capability” is defined “without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.” See § 706(c) of the 1996 Act.

critical to the future of our nation.³ Advanced services already play a vital role, and will continue to do so throughout the 21st century, in the nation's economy and the life of its people. Many U.S. companies, both large and small, now depend on advanced services to run various facets of their businesses, including tracking inventory, monitoring consumer relations, and forecasting product sales. Moreover, advanced services have created new jobs, while enabling skilled employees to work more effectively in their current jobs. Advanced services have also created greater flexibility and opportunity in the workplace, particularly in the increased use of telecommuting by employees who remain connected to their jobs despite distance and other factors.

3. In addition to their benefits to the economy, advanced services have a dramatic impact on everyday citizens. Advanced services improve the educational opportunities of children and adults everywhere. High-speed connections to the Internet allow children in rural areas from Alaska to Florida to access the same information as schoolchildren in urban areas. Moreover, distance learning provides more choices for children and adults to access educational materials of distant learning institutions.

4. Telemedicine networks made possible by advanced services save lives and improve the standard of healthcare in sparsely-populated, rural areas. These services bring the skills and knowledge of specialized doctors and other medical professionals to people that would otherwise have to travel long distances to reach them. Advanced services also permit rural healthcare providers to utilize the latest medical information, which, in turn, improves the general provision of healthcare in areas of the country that have traditionally been underserved.

5. Applications that require advanced telecommunications capability will continue to grow exponentially. Only a few years ago, applications and services that we take for granted today were unheard of by a vast segment of the population. These developments are expected to reduce the cost of communication and to spur innovation and individualization on a previously unthinkable scale. For example, companies are developing services and applications making use of Internet Protocol (IP), including Voice over IP (VoIP), which are delivered over broadband connections. This new communications environment could provide each consumer with a highly customized, low-cost choice of services delivered in the manner of his or her choosing. Therefore, monitoring the progress of deployment of advanced telecommunications platforms and determining if steps can or should be taken to further encourage this growth is one of the Commission's most important duties. We strongly encourage commenters to provide data and new ideas on how to conduct this and future section 706 inquiries. We also invite the Federal-State Joint Conference on Advanced Telecommunications Services (Joint Conference) to submit any information that it deems appropriate into this docket.

II. BACKGROUND

6. The Commission has conducted three inquiries pursuant to section 706 to date, concluding in each proceeding that the deployment of advanced telecommunications capability was reasonable and timely on a general, nationwide basis.⁴ In the initial 706 inquiry, the

³ For purposes of this inquiry, we use the terms "advanced" and "broadband" service interchangeably.

⁴ *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*, CC Docket No. 98-146, Report, 14 FCC Rcd 2398, 2402, 2446-48 (1999) (*First Telecommunications Act of 1996*) (continued...)

Commission presented a snapshot at the early stages of the deployment of advanced services. The Commission surveyed anecdotal evidence relating to trends in investment in broadband facilities, deployment of facilities that serve the “last mile” to consumers, and demand for broadband.

7. In its second 706 inquiry, the Commission expanded its information collection efforts to gain a more comprehensive understanding of the availability of advanced telecommunications capability. Among other things, the Commission launched a formal data collection program to gather standardized information from providers of advanced telecommunications capability through FCC Form 477.⁵ The Commission also convened a Joint Conference, consisting of federal and state regulators, to provide a forum for an ongoing dialogue among the Commission, the states, and regional and local entities regarding the deployment of advanced telecommunications capability.⁶ And finally, the Commission undertook a series of in-depth case studies to gain a detailed understanding of how advanced telecommunications capability is being deployed and used in different communities.

8. In its third 706 inquiry, the Commission again examined the advanced services marketplace, using the same framework for information collection and analysis as previous inquiries.⁷ In reaching its conclusions, the Commission relied upon standardized information from providers of advanced telecommunications capability derived from FCC Form 477, as well as information gathered from commenters, analysts, and other sources.⁸

9. Aside from its formal 706 inquiries, the Commission has published semi-annual statistical reports every year since 2000, summarizing the FCC Form 477 data relating to high-speed connections.⁹ We will shortly seek comment on specific proposals to improve our current

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Report); *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*, CC Docket No. 98-146, Second Report, 15 FCC Rcd 20913, 20991-96 (2000) (*Second Report*); *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*, CC Docket No. 98-146, Report, 17 FCC Rcd 2844 (2002) (*Third Report*).

⁵ *Local Competition and Broadband Reporting*, CC Docket No. 99-301, Report and Order, 15 FCC Rcd 7717 (2000) (*Data Gathering Order*), recon. pending.

⁶ The Federal-State Joint Conference on Advanced Services, which is comprised of federal and state representatives, was convened by the Commission on October 8, 1999, to further the vision of section 706 of the 1996 Act. To that end, the Joint Conference has held several field hearings to gather information on the deployment of advanced services, and issued a report regarding the availability and demand for broadband services in the United States. See *Broadband Services in the United States: An Analysis of Availability and Demand*, Federal-State Joint Conference on Advanced Services, October 2002 (Joint Conference Report). We invite the Joint Conference to update the record with any information it has gathered since 2002.

⁷ *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*, CC Docket No. 98-146, Third Notice of Inquiry, 16 FCC Rcd 15515 (2001) (*Third NOI*).

⁸ *Third Report* at 2846-47.

⁹ FCC Form 477 collects on a semi-annual basis information relating to the provision of services that deliver an information carrying capability in excess of 200 kbps in at least one direction. We have, to date, collected information nine times under this program. The most recently published report, attached as Appendix A to this

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FCC Form 477 data gathering program, including extending that program for five years beyond its currently scheduled sunset in March 2005. While any modifications that we may adopt in response to that Notice will not be in place within the six month time frame for this inquiry, we view that undertaking as a critical effort in our ongoing efforts to monitor the deployment of advanced telecommunications capability.

III. ISSUES FOR INQUIRY

10. At the outset, we solicit information consistent with the framework utilized in past reports: (i) how should we define advanced telecommunications capability? (ii) is advanced telecommunications capability being deployed to all Americans? (iii) is the current level of deployment reasonable and timely? and (iv) what actions, if any, can be taken to accelerate deployment? We intend, however, to extend our analysis beyond the framework of our previous 706 reports to examine additional questions of potential interest to policymakers. In particular, we seek to develop a more rigorous analysis of the availability of advanced telecommunications capability in different market segments and areas of varying densities. Moreover, we seek to develop a better understanding of the economic considerations that support the deployment of advanced telecommunications capability. We hope to analyze available information relating to consumer adoption and usage of services requiring advanced telecommunications capability. We also intend to examine trends in other nations and how our deployment of advanced telecommunications capability affects our role in a global economy. We welcome any additional information that commenters believe would further public understanding and dialogue on these critical issues.

A. What is “Advanced Telecommunications Capability”?

11. We seek comment on how we should define “advanced telecommunications capability” for purposes of this inquiry. Since 1999, the Commission has used the terms “advanced telecommunications capability” as “high-speed, switched, broadband telecommunications capability,” but did not specify what speed should be encompassed within these terms.¹⁰ In the past, the Commission used the terms “advanced telecommunications capability” and “advanced services” to describe services and facilities with an upstream (customer-to-provider) and downstream (provider-to-customer) transmission speed of more than 200 kilobits per second (kbps).¹¹ The Commission also used the term “high-speed” to describe services and facilities with over 200 kbps capability in at least one direction.¹² Given the rapid technological changes in the marketplace, we seek comment on the need to alter the definitional framework utilized in prior inquiries.¹³ Has technology or the marketplace evolved such that we

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Notice of Inquiry, presents data as of June 2003. See *High-Speed Services for Internet Access: Subscriberhip as of June 30, 2003* (Ind. An. and Tech. Div., rel. Dec. 22, 2003) (*June 2003 Statistical Summary*), available at <http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/hspd1203.pdf>.

¹⁰ See n. 2 *supra*.

¹¹ See *Third Report*, 17 FCC Rcd at 2850-52; *Second Report*, 15 FCC Rcd at 20919-21; *First Report*, 14 FCC Rcd at 2406-08.

¹² *Id.*

¹³ As noted above, the Commission currently collects information about lines that are capable of providing services at 200 kbps in one direction, 200 kbps in both directions, and 2 megabits per second (Mbps) in both directions. See

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should redefine the term “advanced services” to be speeds higher than 200 kbps in one or both directions? Have consumer expectations with respect to bandwidth needs changed since prior reports? What sources of information currently exist regarding the deployment of advanced telecommunications capability under alternative definitions?¹⁴ We note that we intend to seek comment in a separate proceeding on whether to amend our existing FCC Form 477 reporting program to gather more detailed information about the provision of services at speeds higher than 200 kbps.¹⁵ Are there reasons other than the status of technological development that support modifying the definition? Are any other attributes, besides speed in which a particular quantity of information can be transmitted, relevant to the definition of advanced telecommunications capability?

12. In a report to Congress released after our last 706 inquiry, the General Accounting Office (GAO) recommended that the Commission “should develop a strategy for periodically evaluating whether existing informal and experimental methods of data collection are providing the information needed to monitor the essential characteristics and trends of the Internet backbone market and the potential effects of the convergence of communications services.”¹⁶ The GAO also recommended that “if a more formal data collection program is deemed appropriate, [the Commission] should exercise its authority to establish such a program.”¹⁷ We seek comment on the GAO’s recommendations, and whether our existing methods of data collection relating to the Internet backbone are sufficient.¹⁸

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Local Competition and Broadband Reporting, CC Docket No. 99-301, Report and Order, 15 FCC Rcd 7717, 7752-7753 (2000) (*Data Gathering Order*).

¹⁴ We recognize that any changes we may adopt in our FCC Form 477 reporting program will not be in place prior to the conclusion of this inquiry, but such modifications could assist us in future 706 inquiries.

¹⁵ In the separate proceeding, we will seek comment on whether facilities-based service providers should report service speeds within specified bandwidth service tiers in order to better quantify the state of broadband infrastructure and high speed service delivery in the United States advanced services marketplace. We will also seek specific comment on what, if any, steps should be taken to ensure accuracy and comparable measurement of high speed service amongst various facilities-based broadband service providers.

¹⁶ Report to Subcommittee on Antitrust, Business Rights and Competition, Committee on the Judiciary, U.S. Senate, Telecommunications: Characteristics and Competitiveness of the Internet Backbone Market, GAO-02-16, at 29 (October 2001), available at <<http://frwebgate.access.gpo.gov/cgi-bin/useftp.cgi?IPAddress=162.140.64.21&filename=d0216.pdf&directory=/diskb/wais/data/gao>>.

¹⁷ *Id.*

¹⁸ In the *Second Report*, the Commission used the term “backbone” to refer to “long haul communications transport facilities.” See *Second Report*, 15 FCC Rcd at 20923-24. In the *Third Report*, the Commission used the term long haul communications transport facilities to refer to high-speed physical transport, that includes, but is not limited to, facilities used to support the Internet backbone. See *Third Report*, 17 FCC Rcd at 2853, n. 33. See also Letter from Michael K. Powell, Federal Communications Commission, to Senator Joseph Lieberman, United States Senate, dated January 11, 2002; Letter from Michael K. Powell, Federal Communications Commission, to Congressman Dan Burton, United States House of Representatives, dated January 11, 2002 (“The Commission has directly addressed the Internet backbone market on multiple occasions including the First Section 706 Report to Congress, the MCI / WorldCom merger, the Bell Atlantic / GTE merger, and the MCI / Sprint merger. The FCC has considered the Internet backbone market in developing its ICAIS policy for international meetings (“International Charging Arrangements for Internet Services” involving pressure to impose telecommunications accounting schemes on Internet peering). The Network Reliability and Interoperability Council, an FCC federal advisory committee, has also touched on the issue, recommending that backbones publish their peering policies and developing a white paper on interconnection between Internet backbone. The FCC Office of Plans and Policy has

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B. Is Advanced Telecommunications Capability Being Deployed to All Americans?

13. We seek comment on whether advanced telecommunications capability is being deployed to all Americans. In particular, we seek comment on three general areas in order to facilitate our analysis: (1) the availability of advanced telecommunications capability and whether it has changed since the *Third Report*; (2) the economics underlying investment in advanced infrastructure and service deployment; and (3) various advances in advanced services technology.

14. Availability. As previously noted, the Commission began gathering data about the provision of high-speed and advanced services to end users in 2000.¹⁹ Our current data collection program requires any facilities-based provider that has at least 250 high-speed service lines or wireless channels in service in a state to report basic information about its service offerings and customers twice yearly.²⁰ Each filer provides data on the total number of lines or wireless channels by technology (i.e., service provided on coaxial cables, wireline telephone lines, fixed wireless, or satellite). For each “technology subtotal,” providers report additional detail concerning the percentage of lines that are connected to residential and small business users, the percentage of lines that provide service at more than 200 kbps in both directions, and the number of lines that provide speeds exceeding 2 Mbps.

15. From this data, we obtain a verifiable count of how much service within specified parameters is being delivered by those service providers that responded. Given the association between subscription and deployment, such data collection provides a means to assess the pace at which advanced telecommunications capabilities are being made available in different parts of the country and across different demographic groups. Moreover, we will shortly propose to revise our current FCC Form 477 to obtain more detailed understanding of the provision of services with greater bandwidth than 200 kbps and the availability of the broadband technologies that have achieved the greatest mass market acceptance to date, cable modems and DSL connections, which should facilitate future 706 inquiries.

16. We recognize that altering our current Form 477 reporting framework could provide additional information that would be useful in analyzing the state of deployment of advanced telecommunications capabilities. Obtaining more detailed information about services at speeds higher than 200 kbps could become a valuable tool to assist us in future section 706 inquiries. At the same time, we encourage commenters in this proceeding to provide us with

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released an OPP Working Paper on the subject entitled *The Digital Handshake: Connecting Internet Backbones* (September 2000).”).

¹⁹ The Commission chose to collect data relating to high-speed services “because we believe that these services are an important stepping stone in the deployment of advanced telecommunications services and that these services may be priced to be particularly attractive to residential customers seeking, for example, high-speed Internet access.” *Data Gathering Order*, 15 FCC Red at 7731.

²⁰ We have encouraged facilities-based providers that fall below the threshold in a given state to submit the Form 477 on a voluntary basis. In the Commission’s most recent data collection, about 30 entities made voluntary filings, representing 0.05 percent of total reported high-speed lines. See *High-Speed Services for Internet Access: Subscriberhip as of June 30, 2003* (Ind. Anal. and Tech. Div. rel. Dec. 22, 2003) (*June 2003 Statistical Summary*), available at <http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/hspd1203.pdf>.

more detailed information about the provision of services today at speeds higher than 200 kbps.

17. We recognize that providers are not currently required to report the number or type of high-speed service subscribers in each zip code, but only to report the zip codes in which they had at least one high-speed service subscriber. As a result, we cannot determine from our data the extent to which high-speed services in a given zip code indicates that high-speed services are widely available, or whether they are restricted to certain types of customers located in limited areas. The zip code data depicts areas where at least one customer receives high-speed services in the last mile to the customer premises. This data provides the Commission with one tool for our analysis of whether advanced telecommunications capability is being made available to all Americans. We also note that we will shortly propose to require providers to indicate which technologies are being used to provide connections in a given zip code, which should enable more accurate mapping in the future of where specific technologies are in use, and we will seek comment on whether to require providers to indicate the number of subscribers in a given zip code.²¹

18. We now have semi-annual data about subscribership to high-speed and advanced services dating from December 1999 through June 2003. These data, contained in Appendix A to this Notice of Inquiry, represent a significant time series for analysis and discussion. Now that we have several years of data, we are particularly interested in analyzing the trends that have developed over time. These data show a continued, steady increase in both residential and small business high-speed lines since our last 706 report.²² Cable modem and ADSL continue to be the market leading technologies, at present. We request comment on what conclusions we should draw from these data.

19. We welcome additional data from external sources that will enable us to make informed judgments about whether advanced telecommunications capability is being made available to consumers in a reasonable and timely manner. We request objective, empirical data from companies, think tanks, governments, analysts, consumer groups, and others. We especially welcome data organized in ways that will enable us to measure investment, availability, and subscription for different technologies, companies, areas, and types of consumers. Additionally, we seek information relating to the price points and actual speeds at which high-speed and advanced services are being made available to consumers, and information relating to product tiering. We also seek data that would shed additional light on the extent to which consumers have a choice of competing providers of advanced or high-speed services. In addition, we seek comment on whether there are other ways of analyzing our existing FCC Form 477 data.

20. Economics of Network Investment and Service Deployment. In the *Third Report*, the Commission observed that carriers continued to invest in the high-speed and advanced services sector in a substantial way, resulting in increased availability of high-speed and advanced services for consumers across the nation.²³ The Commission took note, however, that

²¹ See *supra* para. 15.

²² For purposes of the FCC Form 477, the term “residential” includes “small businesses.” Filers are instructed to “classify service provided to customers as residential and small business if they take broadband services normally associated with residential customers.” See *Data Gathering Order*, 15 FCC Rcd at 7781.

²³ See *Third Report*, 17 FCC Rcd at 2869.

investment trends had generally slowed and gone through a period of transition since the *Second Report*.²⁴ Despite these trends, the Commission concluded that investment in infrastructure for most high-speed and advanced services markets remained strong, and that the market would continue to expand and availability to increase.

21. We seek comment on current investment trends and the extent to which they may reflect the availability of high-speed and advanced services. We seek comment on the relationship between the pace of investment, consumer demand, and general market expectations. We also seek comment on whether providers of high-speed and advanced services have access to sufficient levels of capital to fund infrastructure build-out and whether additional steps should be taken to accelerate deployment.

22. We seek to develop a greater understanding of the economics underlying deployment of advanced telecommunications capability and services that utilize that capability. How do the economics change over time as certain levels of deployment and/or penetration are achieved? Do the economics of deploying advanced telecommunications capability reduce availability in some communities? What role could universal service play in ensuring that deployment is reasonable and timely for all Americans?²⁵ How do providers differentiate their product among different consumer groups? What strategies, tactics, plans, organization, and operational structures do firms utilize to deliver technology and related services to consumers?

23. We note that some companies offer tiered service schemes, which permit both entry level and more sophisticated, higher bandwidth services to be delivered over the same infrastructure.²⁶ To what extent could the availability of different product tiers affect penetration in today's marketplace? To what extent should the existence of product tiering affect our assessment of whether advanced telecommunications capability is being deployed on a reasonable and timely basis?

24. Trends in Developing Technologies. In prior reports, the Commission looked

²⁴ The Commission took note of several reports indicating that the slowdown in investment may have been caused by a variety of factors, including the general economic downturn, over-building by carriers, over-manufacturing by vendors, over-capitalization by financial markets, and unrealistic market expectations by vendors. *See id.*, 17 FCC Rcd at 2870.

²⁵ 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." *See 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*, Order and Order on Reconsideration, CC Docket No. 96-45, 18 FCC Rcd 15090, 15095, para. 13 (2003) (describing "no barriers" policy).

²⁶ *See* "Cable Loses Broadband Ground to DSL", Reuters (February 2004), available at <http://news.com.com/2100-1034-5162225.html>; "Falling DSL Prices May Herald a Broadband Sea Change," *Broadband Business Report* in the *HollywoodReporter.com* (February 2004), available at http://www.hollywoodreporter.com/thr/pwc/feature_display.jsp?vnu_content_id=2085432; "Tiers on Time Warner's Pillow," *The Street.Com*, reported in *CED Broadband direct* at *CEDmagazine.com* (December 2003), available at <http://www.cedmagazine.com/cedailydirect/1203/cedaily031210.htm# 3>.

closely at the various technologies currently capable of providing high-speed and advanced services as well as those technologies that are likely to emerge in the near future.²⁷ In particular, the *Third Report* described in detail several “last mile” technologies of high-speed systems: (1) cable modem service; (2) digital subscriber line (DSL, especially asymmetric DSL or ADSL); (3) other Local Exchange Carrier (LEC)-provided wireline services;²⁸ (4) terrestrial fixed wireless service; and (5) satellite service.²⁹ The Commission determined that competition among providers within certain technologies is emerging and that there is potential for several different technological options for providing high-speed and advanced services.

25. We seek comment as to any new developments in this area. Are there new technologies that are now being used to provide high-speed or advanced services, or likely to be used in the near future, such as Wi-Fi or Wi-Max,³⁰ or broadband over power lines?³¹ If so, how widely have these new technologies been deployed and what percentage of customers utilize such services? What is the role of mobile wireless technologies? To what extent may some of these developments improve the speed and range of services offered to consumers? Are these technological developments likely to be particularly beneficial to specific groups of customers, such as rural customers or customers with disabilities? Have there been any other changes in the industry that affect the Commission’s conclusions in the *Third Report*?

26. We note that the Commission’s Form 477 data collection program captures the marketplace presence of broadband services that utilize new and innovative technologies once consumer up-take of the services reaches a certain level. Our data collection does not, however, directly monitor the development of new technologies with likely, or possible, application to advanced services. Nor does our data collection program directly monitor the development of innovative applications that utilize advanced telecommunications capability. We therefore invite parties to bring to our attention technologies that might be used by current or potential providers to deliver new advanced services to consumers. In addition, we are interested in technologies that might be used directly by consumers, e.g., within the consumer’s premises, to lower the cost or difficulty of installing or using advanced services. We also are interested in technologies that

²⁷ See, e.g., *Third Report*, 17 FCC Rcd at 2877-2881. For example, Verizon Wireless now appears to offer high-speed mobile data services (300-500 kbps) in Washington, DC and San Diego, CA. See <<http://news.vzw.com/news/2003/09/pr2003-09-29.html>>.

²⁸ See *Third Report*, 17 FCC Rcd at 2920.

²⁹ See *Third Report*, 17 FCC Rcd at 2913-2927.

³⁰ The term Wi-Fi, short for “Wireless-Fidelity,” was originally applied to unlicensed wireless devices operating in the 2.4 GHz region of the spectrum in accordance with the Institute of Electrical and Electronics Engineers (IEEE) 802.11(b) standard. More recently, the term has also been applied to unlicensed wireless devices operating in the 5 GHz region in accordance with IEEE 802.11(a). The Commission does not require devices operating in either the 2.4 GHz or 5 GHz bands to meet the IEEE standards. The term Wi-Max, short for “Worldwide Interoperability for Microwave Access,” refers to the two IEEE 802.16 standards developed for fixed wireless broadband access systems. The 802.16a standard is used for systems operating between 2 and 11 GHz, while the 802.16b standard is for systems operating between 10 and 66 GHz. Wi-Max systems have a maximum speed of 75 Mbps and a theoretical range of 30 miles under ideal conditions but require a clear line of sight. The specifications cover both the Media Access Control and the physical layers for fixed systems employing a point-to-multipoint architecture.

³¹ The Commission is examining issues relating to emerging technologies in several ongoing dockets. See, e.g., *Carrier Current Systems, including Broadband over Power Line Systems, Amendment of Part 15 regarding new requirements and measurement guidelines for Access Broadband over Power Line Systems*, ET Docket Nos. 03-104, 04-37, Notice of Proposed Rulemaking, FCC 04-29 (rel. Feb. 23, 2004).

might enable new broadband applications of interest to consumers.

C. Is Deployment Reasonable and Timely?

27. Once we have gathered information on the deployment of advanced telecommunications capability, section 706 requires that we determine whether such capability is being deployed to all Americans “in a reasonable and timely fashion.” We generally seek comment on whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion and ask commenters to describe the empirical basis for their conclusions.

28. In determining whether deployment is reasonable and timely, the Commission examined in the *Second* and *Third Reports* various aspects of the deployment of, and market for, advanced services. In particular, it examined the availability of high-speed and advanced services, focusing both on how it has changed since prior reports and how it was projected to change in the future. Second, it examined investment in the infrastructure to support advanced services. Third, it reviewed trends in the alternatives available to consumers of advanced services, assessing both the number of providers offering service through a particular technology and the different technological options available to consumers. We request comment on whether to modify our analytical framework in this inquiry, and welcome suggestions of additional or alternative criteria. Are there other areas of inquiry that would be informative for the Commission to explore?

29. In the *Third Report*, the Commission specifically considered the availability of advanced services for several groups of consumers, including businesses, residential consumers, rural communities, elementary and secondary schools, individuals living on tribal lands, and persons with disabilities. Should we separately examine these specific categories in this inquiry? Are there other types of consumers or geographic areas, such as insular areas, that are likely to experience broadband deployment at a different pace such that we should also monitor the rate of deployment to those customers and areas?

30. We specifically seek comment on the status of deployment of high-speed and advanced services to consumers living in rural areas. Our data collection shows that subscription to advanced services in sparsely populated zip codes has grown, and the gap in reported lines in service between densely and sparsely populated zip codes has shrunk. For example, in June 2003, 68.5% of the most sparsely populated zip codes had high-speed subscribers, compared to 36.8% two years earlier. Moreover, over the last two years, the gap between the most densely populated zip codes and most sparsely populated zip codes had shrunk from 61.3 percentage points to 30.4 percentage points, largely due to increases in the number of most sparsely populated zip codes with subscribers.³² What are some of the reasons for this reduction in the gap between the most densely populated and the most sparsely populated zip codes? To what extent is the gap in subscribership among more densely and more sparsely populated areas due to the fact that many smaller providers operating in rural areas may fall below the current reporting threshold for our Form 477 data collection program? Do consumers in rural areas enjoy choices among technologies and tiers of high-speed services comparable to those available to consumers

³² *Id.* In 2003, 98.9% of the most densely populated zip codes reported at least one high-speed subscriber, compared to 98.1% two years earlier.

in urban areas? Are high-speed services available to consumers in rural areas at rates comparable to those rates charged in urban areas?

31. We note that the National Exchange Carrier Association (NECA) recently published a study that concluded that technological advances among small, mostly rural local telephone companies between 2001 and 2003 were greater than expected.³³ In fact, the number of NECA companies currently deploying DSL services increased from 557 in 2001 to 814 in 2003.³⁴ According to the NECA report, 78.95% of member companies' access lines now are equipped for DSL.³⁵ NECA concluded that rural telephone companies are meeting the growing consumer demand for advanced services in spite of the hurdles they must overcome, including the lack of economies of scale that large, non-rural companies are afforded.³⁶ What lessons can be learned from the steps taken by some NECA members to encourage deployment in less-developed areas? Are there steps that the Commission should take that would encourage further deployment in rural areas?

32. We also seek focused comment on the deployment of advanced telecommunications capability to low income individuals. We note that, as of June 2003, 98.5% of the highest income zip codes reported high-speed lines, and 78.3% of the lowest income zip codes reported high-speed lines.³⁷ By comparison, as of June 2001, 96.4% of the highest income zip codes reported high-speed lines, and 59.1% of the lowest income zip codes reported high-speed lines.³⁸ As a result, over the last two years, the gap between the highest income zip codes and the lowest income ones shrunk from 37.3 to 20.2 percentage points, primarily due to increases in the number of low-income zip codes with subscribers. Why has the gap between the highest income zip codes and the lowest income zip codes decreased over the past two years? Have any specific developments occurred that account for these changes? To what extent are firms marketing lower priced tiers of services to lower income individuals?

33. In addition, we seek comment on the availability of advanced telecommunications capability to individuals living on tribal lands and in the U.S. territories. In June 2003, high-speed services were available in 86.9% of zip codes that contain tribal territories, up from 71.3% in June 2001.³⁹ At this time, service providers report high-speed lines in Puerto Rico and the Virgin Islands, but no service providers report high-speed lines in the Pacific Insular Islands.⁴⁰ Does the information from our data collection program adequately capture the availability of high-speed or advanced services in these areas? In areas where services are being made

³³ NECA's 2003 Access Market Survey – Fulfilling the Digital Dream: a Report on the Technology of Small and Rural Telephone Companies, prepared by NECA's Technology Planning and Implementation Group (NECA Report). The NECA Report covered 5,400 switches, representing more than 1,100 local telcos and 6.8 million lines in 47 states.

³⁴ NECA Report at 8.

³⁵ *Id.*

³⁶ *Id.* at 4, 10.

³⁷ *June 2003 Statistical Summary* at Table 15.

³⁸ *Id.*

³⁹ *See supra para.* 30.

⁴⁰ *June 2003 Statistical Summary* at 1.

available, are they being deployed to all consumers, or just a limited number of consumers? What types of unique challenges are there to the deployment of advanced services in tribal areas or U.S. territories? Are these challenges similar or distinguishable from those encountered by consumers living in rural areas of the nation? What types of technology are being used to provide advanced services on tribal lands? What types of technology are most widely deployed on tribal lands and why? Are there certain types of technological developments that may be especially promising for future deployment in tribal areas or the U.S. territories?

34. We also seek specific comment on the deployment of advanced telecommunications capability to elementary and secondary schools and classrooms. The U.S. Department of Education publishes on an annual basis various statistics relating to Internet access in U.S. public schools and classrooms. Among other things, the most recent study documents the steady increase in number of schools with Internet access, and the number of instructional classrooms with Internet access.⁴¹ For instance, in 2002, 99% of public schools had access to the Internet, compared to 14% in 1996.⁴² Moreover, in 2002, 92% of public school classrooms had access to the Internet, compared to 14% in 1996. In 2002, 94% of public schools reported using broadband connections for Internet access, compared to 80% in 2000 and 85% in 2001.⁴³ Do these figures support a conclusion that advanced telecommunications capability is being deployed to elementary and secondary schools and classrooms on a reasonable and timely basis? Are there any other sources of information that would provide insight into whether the deployment of advanced telecommunications services to elementary and secondary schools and classrooms is occurring on a reasonable and timely basis?

35. To what extent do persons with disabilities have access to advanced telecommunications? Have there been recent developments in adaptive technologies that improve the capacity of persons with disabilities to access advanced telecommunications? Does the availability of video relay services through the Telecommunications Relay Service Fund play a role in promoting demand for and access to high-speed services among persons with disabilities? To what extent does income, employment, or other factors among persons with disabilities influence their ability to access advanced or high-speed services? How should the Commission evaluate the “availability” of advanced telecommunications services for persons with disabilities, given the unique challenges that persons with disabilities may encounter in accessing advanced services? Are advanced services being made available to medically underserved rural communities?

D. What Actions Can Accelerate Deployment?

36. Pursuant to the 1996 Act, “the Commission and each State commission ...shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans...by utilizing...price cap regulation, regulatory forbearance,

⁴¹ U.S. Department of Education, Institute of Education Sciences, Pub. No. 2004-001, *Internet Access in U.S. Public Schools and Classrooms: 1994–2002* (October 2003).

⁴² *Id.* at Figure 1 and page 5.

⁴³ *Id.* at 22, Table 3. For the 2001 and 2002 surveys, broadband connections were defined as including T3/D3, fractional T3, T1/D1, fractional T1, cable modem, and DSL connections. DSL connections were not listed on the 2000 questionnaire.

⁴⁵ *See* § 706(a) of the 1996 Act.

measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment.”⁴⁵ The *Third Report* described several examples of these and other activities that the Commission, other governmental entities, private groups and individuals have undertaken to promote competition and speed the deployment of advanced services. These included Commission proceedings to establish a regulatory framework for broadband services,⁴⁶ promote investment through increased opportunities for broadband competition,⁴⁷ reform our universal service system,⁴⁸ and encourage the efficient use of spectrum.⁴⁹ We note that the Congressional Budget Office recently published a report that analyzed the development of the residential broadband market to assess whether structural features or regulatory obstacles impede its further rapid growth, and concluded that federal intervention was not warranted at this time.⁵⁰ To the extent commenters advocate that we should undertake additional actions to encourage the deployment of advanced telecommunications capability, they should set forth those proposals with specificity.

37. We also note that if we find that advanced telecommunications capability is not being deployed in a reasonable and timely manner, we are to “take immediate action to accelerate deployment of such capability by removing barriers to infrastructure investment and promoting competition in the telecommunications market.”⁵¹ Are there groups of Americans for whom the pace of deployment justifies action under section 706 to remove barriers to infrastructure investment or to promote competition? If so, what would those specific actions entail, and what would the costs and benefits of those actions be?

38. In the *Third Report*, the Commission expressed concern about the difficulty some companies have faced in securing access to the rights-of-way necessary to deploy advanced telecommunications infrastructure in a timely manner.⁵² Based on its commitment to ensuring

⁴⁶ *Third Report*, 17 FCC Rcd at 2904-2905.

⁴⁷ *Id.*, 17 FCC Rcd at 2899, 2905.

⁴⁸ *Id.*, 17 FCC Rcd at 2900, 2906.

⁴⁹ *Id.*, 17 FCC Rcd at 2901, 2906.

⁵⁰ Congressional Budget Office, *Does the Residential Broadband Market Need Fixing?* (December 2003) (“The number of broadband customers is growing at a rapid pace, and current providers face the prospect of new broadband market entrants and other competitive pressures from converging telecommunications markets. Many of the problems that remain, such as uneven distribution and availability of broadband, are a function of the market’s immaturity and not necessarily permanent features.”)

⁵¹ See § 706(a) of the 1996 Act.

⁵² See *Third Report*, 17 FCC Rcd at 2906-7, para. 166. Currently, there are several pending proceedings relating to rights-of-way issues at the Commission. See *Promotion of Competitive Networks in Local Telecommunication Markets*, Notice of Proposed Rulemaking and Notice of Inquiry in WT Docket No. 99-217 and Third Further Notice of Proposed Rulemaking in CC Docket No. 96-98, 14 FCC Rcd 12673 (1999); *Comments Sought on City Signal Communications, Inc. Petition for Declaratory Ruling Concerning Use of Public Rights of Way for Access to Poles in Cleveland Heights, Ohio Pursuant to Section 253*, CS Docket No. 00-255, Public Notice, 16 FCC Rcd 1415 (2000); *Comments Sought on City Signal Communications, Inc. Petition for Declaratory Ruling Concerning Use of Public Rights of Way for Access to Poles in Pepper Pike, Ohio Pursuant to Section 253*, CS Docket No. 00-255, Public Notice, 16 FCC Rcd 1419 (2000); *Pleading Cycle Established for Comments on Petition of ASCENT for Preemption of Montgomery, Alabama Taxation Policy*, CC Docket No. 01-40, Public Notice, 16 FCC Rcd 3653 (2001); *Pleading Cycle Established for Comments on Fiber Technologies Networks, L.L.C. Petition for Preemption Pursuant to Section 253*, WC Docket No. 03-37, Public Notice, 18 FCC Rcd 1683 (2003).

that rights-of-way issues are resolved in a fair and expeditious manner, the Commission announced that it intended to explore solutions through a dialogue with industry and state and local colleagues, in order to remove barriers that may hinder investment in infrastructure for advanced or high-speed services. On October 16, 2002, the Commission hosted a public Rights-of-Way Forum.⁵³ The Rights-of-Way Forum focused on exploring the Commission's role in facilitating discussion, identifying model principles and practices, and developing consensus positions among local authorities, state regulators, and the industry. We invite comment regarding the record developed at the Commission's Rights-of-Way Forum.

39. We note that several other organizations, such as the National Association of Regulatory Utility Commissioners (NARUC) and the National Telecommunications and Information Administration (NTIA) have also initiated discussions regarding rights-of-way issues. For example, during the July 2002 NARUC conference, a study committee released a white paper that urged the Commission to include a section in the 706 report that discusses barriers to "deployment of broadband networks associated with abusive rights-of-way practices of federal, state and local units of government and steps that need to be taken to abate those practices."⁵⁴ The NARUC study committee on rights-of-way issues also recommended the development of a set of national broadband principles and put forth model rights-of-way access rules.⁵⁵ In addition, the NTIA launched a States and Local Rights-of-Way Resources Website, which is designed to foster an exchange of ideas to improve the management and use of rights-of-way.⁵⁶ Further, the Commission's Intergovernmental Advisory Committee, formerly known as the Local State Government Advisory Committee (LSGAC), provides guidance to the Commission on issues of importance to state, local and tribal governments, including public rights-of-way matters.⁵⁷

40. We seek comment on the types of best practices that could help create reliable and reasonable expectations regarding management of the public rights-of-way that may help remove barriers to investment in advanced telecommunications services. We also seek comment on methods of facilitating resolution of rights-of-way disputes. Are the Commission's current rules effective in resolving rights-of-way disputes and promoting competition? We also ask commenters to discuss the distinction between federal and state responsibilities regarding the use of the public rights-of-way. We note that several states have adopted specific rules and regulations concerning the administration of the public rights-of-way.⁵⁸ We request commenters to discuss their experiences in states where rights-of-way rules have been enacted. In addition, we seek comment on the types of practices used by municipalities or communities to encourage

⁵³ *Commission Releases Agenda for Public Forum on Rights-of-Way Issues*, Public Notice, 17 FCC Rcd 19678 (2002).

⁵⁴ *Promoting Broadband Access Through Public Rights-of-Way and Public Lands*, 2002 NARUC Summer Meetings in Portland, Oregon (rel. July 31, 2002) at 38.

⁵⁵ *Id.* at 18-24.

⁵⁶ See National Telecommunications and Information Administration Website, State and Local Rights-of-Way, at <<http://www.ntia.doc.gov/ntiahome/staterow/statelocalrow.html>>.

⁵⁷ See *FCC Requests Nominations for Membership on Intergovernmental Advisory Committee, formerly known as the Local and State Government Advisory Committee*, Public Notice, 18 FCC Rcd 18071 (2003).

⁵⁸ See, e.g., Wash. Rev. Code § 35.99.010(3), (8); Kan. Stat. Ann. § 12-2001(h); Ariz. Rev. Stat. § 9-582, Subsec. B; Fla. Stat. § 337.401(3)(g); N.D. Cent Code § 49-21-01, para. 16; Minn. R. 7819,4000,4100.

the deployment of advanced telecommunications capabilities. For example, we ask commenters to discuss efforts by municipalities or communities to provide advanced telecommunications capabilities to end-user customers or to aggregate demand to encourage private sector deployment.

E. What are Patterns of Consumer Adoption and Usage of Services Utilizing Advanced Telecommunications Capability?

41. We seek information about how and why consumers, both individuals and businesses, adopt and use services utilizing advanced telecommunications capability. We seek to develop a better understanding of the specific applications and services that utilize advanced platforms. If the application or service existed prior to the advent of advanced infrastructure capable of transmitting information at higher speeds, how has it benefited by the deployment of such infrastructure? To what degree, if any, could these applications and services be improved if advanced infrastructure was more ubiquitous? Are there certain economies of scale that could be achieved if broadband was used by more individuals or businesses? Would the same be true if advanced telecommunications capability was deployed in more places?

42. We also seek information about consumers of advanced services. What types of entities, *e.g.*, businesses or individuals, purchase advanced services? How integral have advanced services become to these consumers? To what degree do businesses and individuals rely on advanced services to conduct business, sell products, or accomplish specific tasks? We also hope to examine how other individuals or businesses that interact with the consumers of advanced services are indirectly affected by the use of advanced services. For example, do customers of businesses that utilize advanced services enjoy lower prices, greater choices, or faster service? Moreover, what applications and services used by such individuals require access to advanced services themselves? We request that commenters not only discuss specific, current services and applications, but possible future ones as well.

F. Does Deployment of Advanced Telecommunications Capability in the United States Impact Our Role in the International Arena?

43. The United States was recently ranked 11th worldwide in broadband use in a recent report by the International Telecommunications Union.⁵⁹ According to another study, the number of broadband subscribers per inhabitant is said to be higher in South Korea, Canada, Japan, Iceland, Sweden, Denmark, Belgium, and the Netherlands than in the U.S.⁶⁰ We ask parties to comment on the potential reasons for relatively high broadband penetration rates in some foreign nations. To the extent that these factors are different for different countries, we ask that parties identify specific actions (or inactions) taken to promote broadband deployment. It has been reported that several foreign governments provide direct investment in the deployment of advanced services.⁶¹ We note that the European Union is seeking widespread broadband

⁵⁹ *ITU Internet Reports: Birth of Broadband*, International Telecommunications Union, Geneva, September 2003, p. 1, Figure 1.1, "Broadband penetration rates around the world."

⁶⁰ See *Broadband and Telephony Services Over Cable Television Networks*, Organization for Economic Cooperation and Development, Working Party on Telecommunications and Information Services Policies, rel. Nov. 7, 2003.

⁶¹ "Other Nations Zip by USA in High Speed Net Race," Jim Hopkins, USA Today, January 19, 2004, at 2B.

access in all of its fifteen member nations by next year.⁶² What other factors have contributed to the higher utilization of advanced services in other countries? Are there lessons that we could learn from the experiences of other countries? Based on these experiences, are there actions that the Commission should take to accelerate the deployment of advanced telecommunications capability? Are higher levels of penetration in other nations indicative of broader availability of advanced telecommunications capability? Given that usage of advanced services may be more ubiquitous throughout the populations in a number of countries than in the United States, we wish to understand the factors that have contributed to this apparent discrepancy, including methodological or design flaws in existing studies that may have over- or under-estimated the extent of broadband use in particular countries.

44. How does our deployment of advanced infrastructure vis-à-vis other nations affect the ability of our citizens to participate in a global economy? Are domestic jobs and industries more likely to move to other countries where the advanced services deployment and/or penetration is higher? What effect, if any, do any trends in this area have on international trade and the U.S. economic position in the global economy? Commenters should not only focus on the present impact but also on what the effect will be for the foreseeable future.

IV. PROCEDURAL MATTERS

45. We invite comment on the issues and questions set forth in the Notice contained herein. Pursuant to applicable procedures set forth in sections 1.415 and 1.419 of the Commission's rules,⁶³ interested parties may file comments on or before 30 days after publication in the Federal Register of this Notice, and reply comments on or before 45 days after publication in the Federal Register of this Notice. All filings should refer to GN Docket No. 04-54. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS) or by filing paper copies.⁶⁴

46. Comments filed through ECFS can be sent as an electronic file via the Internet to <<http://www.fcc.gov/e-file/ecfs.html>>. Generally, only one copy of an electronic submission must be filed. In completing the transmittal screen, commenters should include their full name, Postal Service mailing address, and the applicable docket number, which in this instance is GN Docket No. 04-54. Parties may also submit an electronic comment by Internet e-mail. To receive filing instructions for e-mail comments, commenters should send an e-mail to ecfs@fcc.gov, and should include the following words in the body of the message: get form <your e-mail address>. A sample form and directions will be sent in reply.

47. Parties that choose to file by paper must file an original and four copies of each filing. 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). The Commission's contractor, Natek, Inc., will receive hand-delivered or messenger-delivered paper filings for the Commission's Secretary at a new location in downtown Washington, DC. The address is 236 Massachusetts Avenue, NE, Suite

⁶² See "*eEurope 2005: An Information Society for All*," Commission of the European Communities, June 2002, p.2, available at <www.europa.eu.int>.

⁶³ 47 C.F.R. §§ 1.415, 1.419.

⁶⁴ See *Electronic Filing of Documents in Rulemaking Proceedings*, 63 Fed. Reg. 24121 (1998).

110, Washington, DC 20002. The filing hours at this location will be 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.

48. 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. U.S. Postal Service first-class mail, Express Mail, and Priority Mail should be addressed to 445 12th Street, SW, Washington, D.C. 20554. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

If you are sending this type of document or using this delivery method...	It should be addressed for delivery to...
Hand-delivered or messenger-delivered paper filings for the Commission's Secretary	236 Massachusetts Avenue, NE, Suite 110, Washington, DC 20002 (8:00 to 7:00 p.m.)
Other messenger-delivered documents, including documents sent by overnight mail (other than United States Postal Service Express Mail and Priority Mail)	9300 East Hampton Drive, Capitol Heights, MD 20743 (8:00 a.m. to 5:30 p.m.)
United States Postal Service first-class mail, Express Mail, and Priority Mail	445 12 th Street, SW Washington, DC 20554

49. Parties who choose to file by paper should also submit their comments on diskette. These diskettes, plus one paper copy, should be submitted to: Sheryl Todd, Telecommunications Access Policy Division, Wireline Competition Bureau, Federal Communications, at the filing window at 236 Massachusetts Avenue, N.E., Suite 110, Washington, D.C. 20002. Such a submission should be on a 3.5-inch diskette formatted in an IBM compatible format using Word or compatible software. The diskette should be accompanied by a cover letter and should be submitted in "read only" mode. The diskette should be clearly labeled with the commenter's name, proceeding (including the docket number, in this case GN Docket No. 04-54, type of pleading (comment or reply comment), date of submission, and the name of the electronic file on the diskette. The label should also include the following phrase "Disk Copy - Not an Original." Each diskette should contain only one party's pleadings, preferably in a single electronic file. In addition, commenters must send diskette copies to the Commission's copy contractor, Qualex International, Portals II, 445 12st Street, S.W., Room CYB402, Washington, D.C. 20554 (*see* alternative addresses above for delivery by hand or messenger).

50. Regardless of whether parties choose to file electronically or by paper, parties should also file one copy of any documents filed in this docket with the Commission's copy contractor, Qualex International, Portals II, 445 12th Street S.W., CY-B402, Washington, D.C. 20554 (*see* alternative addresses above for delivery by hand or messenger) (telephone 202-863-2893; facsimile 202-863-2898) or via e-mail at qualexint@aol.com.

51. The full text of this document is 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, DC, 20554. This document may also be purchased from the Commission's duplicating contractor, Qualex International, Portals II, 445 12th Street,

SW, Room CY-B402, Washington, DC, 20554, telephone (202) 863-2893, facsimile (202) 863-2898, or via e-mail qualexint@aol.com.

52. Comments and reply comments must include a short and concise summary of the substantive arguments raised in the pleading. Comments and reply comments must also comply with section 1.49 and all other applicable sections of the Commission's rules.⁶⁵ 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. We also strongly encourage parties to track the organization set forth in the Notice in order to facilitate our internal review process.

53. We note that there are many other proceedings now underway at the Commission that include issues that could affect a company's, or class of companies' incentive and ability to deploy advanced telecommunications capability. If commenters wish to refer to their filing in another proceeding, they must provide in their comments in this proceeding a complete recitation of the pertinent information and also attach a copy of the filing to which they refer.

54. Subject to the provisions of 47 C.F.R. § 1.1203 concerning "Sunshine Period" prohibitions, this proceeding is exempt from *ex parte* restraints and disclosure requirements, pursuant to 47 C.F.R. § 1.1204(b)(1). Because many of the matters on which we request comment in this Notice may call on parties to disclose proprietary information such as market research and business plans, we suggest that parties consult 47 C.F.R. § 0.459 about the submission of confidential information.

V. FURTHER INFORMATION

55. Alternative formats (computer diskette, large print, audio recording, and Braille) are available to persons with disabilities by contacting Brian Millin at (202) 418-7426 voice, (202) 418-7365 TTY, or bmillin@fcc.gov. This Notice can also be downloaded in Microsoft Word and ASCII formats at http://www.fcc.gov/ccb/universal_service/highcost.

56. For further information, contact Regina M. Brown at (202) 418-7400 in the Telecommunications Access Policy Division, Wireline Competition Bureau.

⁶⁵ See 47 C.F.R. § 1.49.

VI. ORDERING CLAUSES

57. Accordingly, IT IS ORDERED that, pursuant to section 706 of the Telecommunications Act of 1996, this Notice of Inquiry IS ADOPTED.

FEDERAL COMMUNICATIONS COMMISSION

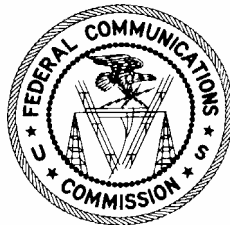
Marlene H. Dortch
Secretary

APPENDIX A

**HIGH-SPEED SERVICES FOR INTERNET ACCESS:
STATUS AS OF JUNE 30, 2003**

High-Speed Services for Internet Access: Status as of June 30, 2003

Industry Analysis and Technology Division
Wireline Competition Bureau
December 2003



This report is available for reference in the FCC's Reference Information Center, Courtyard Level, 445 12th Street, SW, Washington, DC. Copies may be purchased by contacting Qualex International, 445 12th Street, SW, Room CY-B402, Washington, DC 20554, telephone 202-863-2893, facsimile 202-863-2898, or via e-mail qualexint@aol.com. The report can also be downloaded from the **FCC-State Link** Internet site at www.fcc.gov/wcb/stats.

High-Speed Services for Internet Access: Status as of June 30, 2003

Congress directed the Commission and the states, in section 706 of the Telecommunications Act of 1996, to encourage deployment of advanced telecommunications capability in the United States on a reasonable and timely basis.¹ To assist in its evaluation of such deployment, the Commission instituted a formal data collection program to gather standardized information about subscribership to high-speed services, including advanced services, from wireline telephone companies, cable providers, terrestrial wireless providers, satellite providers, and any other facilities-based providers of advanced telecommunications capability.²

We summarize here information from the eighth data collection, thereby presenting a snapshot of subscribership as of June 30, 2003.³ Subscribership to high-speed services for Internet access increased by 18% during the first half of 2003, to a total of 23.5 million lines in service. The presence of high-speed service subscribers was reported in all 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands, and in 91% of the zip codes in the United States.

Before presenting the most recent information in some detail, a brief description of the Commission's data collection program is in order to enable the reader to better understand how the nationwide information presented here may compare to similar information derived from other sources. First, a facilities-based provider of high-speed connections to end users in a given state reports to the Commission basic information about its service offerings and customers if the provider has at least 250 high-speed lines (or wireless channels) in service in that state.⁴ While

¹ See §706, Pub.L. 104-104, Title VII, Feb. 8, 1996, 110 Stat. 153, reproduced in the notes under 47 U.S.C. §157. We use the term "high-speed" to describe services that provide the subscriber with transmissions at a speed in excess of 200 kilobits per second (kbps) in at least one direction. "Advanced services," which provide the subscriber with transmission speeds in excess of 200 kbps in each direction, are a subset of high-speed services.

² *Local Competition and Broadband Reporting*, CC Docket No. 99-301, Report and Order, 15 FCC Rcd 7717 (2000) (*Data Gathering Order*). During this data gathering program, qualifying providers file FCC Form 477 each year on March 1 (reporting data for the preceding December 31) and September 1 (reporting data for June 30 of the same year). An updated FCC Form 477, and Instructions for that particular form, for each specific round of the data collection may be downloaded from the FCC Forms website at www.fcc.gov/formpage.html. Previously, the Common Carrier Bureau collected information on a voluntary basis. See *Local Competition and Broadband Reporting*, CC Docket No. 99-301, Notice of Proposed Rulemaking, 14 FCC Rcd 18106 (1999).

³ Statistical summaries of the earlier Form 477 data collections appeared in *Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, CC Docket No. 98-146, Second Report, 15 FCC Rcd 20913 (2000) (*Second 706 Report*), available at www.fcc.gov/broadband/706.html, and in previous releases of the *High-Speed Services for Internet Access* report, available at www.fcc.gov/wcb/stats.

⁴ The reporting threshold of 250 high-speed lines (or wireless channels) is calculated based collectively on all commonly-owned and commonly-controlled affiliates operating in a given state, with a 10% equity interest as indicia of ownership. For reporting purposes, an entity is a facilities-based provider of high-speed service if it provides the service over its own "local loop" facilities connecting to end users, or over unbundled network elements (UNEs), special access lines, and other leased lines and wireless channels that it obtains from unaffiliated entities and equips to provide high-speed service. Non-facilities-based Internet Service Providers (ISPs), as such, have no reporting obligation. End-user lines equipped as high-speed service by, for example, an incumbent LEC (continued...)

providers not meeting the reporting threshold may provide information on a voluntary basis, as some have done, it is likely that not all such providers have reported data.⁵ In particular, we do not know how comprehensively small providers, many of which serve rural areas with relatively small populations, are represented in the data summarized here. Second, lines (or wireless channels) that are not “high-speed” (i.e., delivering transmissions to the subscriber at a speed in excess of 200 kbps in at least one direction) are not reported. Some asymmetric digital subscriber line (ADSL) services and Integrated Services Digital Network (ISDN) services provided by telephone companies and some services that connect subscribers to the Internet over cable systems do not meet this criterion, but may nevertheless meet the needs of the subscribers who select them.

Based on the latest information now available, readers can draw the following broad conclusions:

- Subscribership to high-speed services increased by 18% during the first half of 2003, to a total of 23.5 million lines (or wireless channels) in service. The rate of growth during the second half of 2002 was 23%. See Table 1.
- High-speed ADSL lines in service increased by 19% during the first half of 2003, to 7.7 million lines. High-speed connections over coaxial cable systems (cable modem service) increased by 20%, to 13.7 million lines.⁶ See Table 1.
- Reported high-speed connections to end users by means of satellite or fixed wireless technologies increased by 12% during the first half of 2003, and reported fiber optic connections to end-user premises increased by 5%. These technologies, together, accounted for about 0.9 million high-speed connections at the end of June 2003. See Table 1.

(Continued from previous page) _____

must be reported by the incumbent LEC or an affiliate (assuming the LEC and its affiliates collectively have at least 250 such lines in service in a given state) irrespective of whether the end user of the retail high-speed Internet-access service is billed by the incumbent LEC, its ISP affiliate, another affiliate, or its billing agent, or by an unaffiliated ISP that has incorporated the incumbent LEC’s high-speed service into a premium Internet-access service marketed under the ISP’s own name.

⁵ High-speed lines reported in recent voluntary submissions represent less than 0.05% of total high-speed lines reported.

⁶ Providers are instructed to report a high-speed subscriber in the (mutually exclusive) technology category that characterizes the last few feet of distribution plant to the subscriber’s premises, e.g., coaxial cable in the case of the hybrid fiber-coax (HFC) architecture of upgraded cable systems. As noted above, ADSL services that do not deliver over 200 kbps in at least one direction are not included in the data reported here. Symmetric DSL services at speeds exceeding 200 kbps are included in the “other wireline” category because they are typically used to provide data services that are functionally equivalent to the T-1 and other data services that wireline telephone companies have offered to business customers for some time.

- Subscribership to the subset of high-speed services that are described as advanced services (i.e., delivering to subscribers transmission speeds in excess of 200 kbps in each direction) increased by 32% during the first half of 2003, to a total of 16.3 million lines (or wireless channels) in service. Advanced services lines provided by means of ADSL technology increased by 16%, and advanced services lines provided over coaxial cable systems increased by 43%.⁷ See Table 2.
- As of June 30, 2003, there were about 20.6 million high-speed lines serving residential and small business subscribers. By contrast, there were about 17.4 million such lines six months earlier, and about 14.0 million a year earlier. See Table 3.
- Of the 20.6 million high-speed lines in service to residential and small business subscribers at the end of June 2003, we estimate that about 14.3 million lines provide advanced services.⁸ See Table 4.
- Among entities that reported facilities-based ADSL high-speed lines in service as of June 30, 2003, about 95% of such lines were reported by incumbent local exchange carriers (ILECs). ILECs claimed a smaller share, about 71%, of high-speed lines delivered over other traditional wireline facilities.⁹ When all technologies are considered, ILECs provided about 35% of high-speed connections to end-user customers. See Table 5.
- Providers of high-speed services over coaxial cable systems report serving subscribers in all 50 states, the District of Columbia, and Puerto Rico. Providers of high-speed ADSL services report serving subscribers in all 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands, as do providers who use wireline technologies other than ADSL, or who use optical carrier (i.e., fiber), satellite, or fixed wireless technologies in the last few feet to the subscriber's premises.¹⁰ See Table 6.

⁷ Providers also estimate the percentage of high-speed connections that are faster than 2 mbps in both directions. About 0.4 million such connections were reported as of June 30, 2003. About 54% of these connections were reported in the other traditional wireline category and about 39% were reported in the optical carrier category.

⁸ Filers of FCC Form 477 do not directly report the number of advanced services lines provided to residential and small business end users, as opposed to other end users. In estimating the number of advanced services lines serving residential and small business end users, we assume that reported advanced service lines were more likely to be delivered to large business users first and to residential and small business users second. *See also Second 706 Report*, 15 FCC Rcd 20943.

⁹ Symmetric forms of DSL services, which are typically purchased by business customers, are included in this category.

¹⁰ Information about providers of high-speed services other than ADSL and cable modem is reported in a single category, for the individual states, to honor requests for nondisclosure of information that reporting entities assert is competitively sensitive. In the *Data Gathering Order*, the Commission stated it would publish high-speed data only once it has been aggregated in a manner that does not reveal individual company data. *See Data Gathering Order*, 15 FCC Rcd 7760.

- The Commission’s data collection program gathers from providers information about the number of high-speed lines in service in individual states, in total and by technology deployed in the last few feet to the subscriber’s premises. Relatively large numbers of total high-speed lines in service are associated with the more populous states. As of June 30, 2003, the most populous state, California, has the largest reported number of high-speed lines. The second, third, and fourth largest numbers of high-speed lines are reported for New York, Florida, and Texas, which are the third, fourth, and second most populous states, respectively. See Table 7 and, for historical data, see Tables 8 - 10.
- Reporting entities estimate the percentage of their high-speed lines in service that connect to residential and small business end users (as opposed to connecting to medium and large business, institutional, or government end users).¹¹ These percentages allow us to derive approximate numbers of residential and small-business high-speed lines in service by state. See Table 11.
- The Commission’s data collection program also requires service providers to identify each zip code in which the provider has at least one high-speed service subscriber. As of June 30, 2003, subscribers to high-speed services were reported in 91% of the nation’s zip codes. In 75% of the nation’s zip codes more than one provider reported having subscribers.¹² See Table 12.
- Our analysis indicates that 99% of the country’s population lives in the 91% of zip codes where a provider reports having at least one high-speed service subscriber. Moreover, numerous competing providers report serving high-speed subscribers in the major population centers of the country. See the map that follows Table 12.
- States vary widely with respect to the percentage of zip codes in the state in which no high-speed lines are reported to be in service. See Table 13.
- High population density has a positive association with reports that high-speed subscribers are present, and low population density has an inverse association. For example, as of June 30, 2003, high-speed subscribers are reported to be present in 99% of the most densely populated zip codes and in 69% of zip codes with the lowest population densities.¹³ The comparable figure for the lowest-density zip codes was 50% a year earlier. See Table 14.

¹¹ Reporting entities are instructed to consider a high-speed line as being provided to a “residential and small business” end user if that end user has a high-speed connection of a type (*e.g.*, speed and price) that is normally associated with residential end users.

¹² Lists of zip codes with number of service providers as reported in the FCC Form 477 filings are made available at www.fcc.gov/wcb/stats in a format that honors requests for nondisclosure of information the reporting entities assert is competitively sensitive.

¹³ For this comparison, we consider the most densely populated zip codes to be those with more than 3,147 persons per square mile (the top decile of zip codes) and the least densely populated zip codes to be those with fewer than 6 persons per square mile (the bottom decile).

- High median household income also has a positive association with reports that high-speed subscribers are present. In the top one-tenth of zip codes ranked by median household income, high-speed subscribers are reported in 98% of zip codes. By contrast, high-speed subscribers are reported in 78% of zip codes with the lowest median household income, compared to 69% a year earlier. See Table 15.

As other information from the Commission's data collection program (FCC Form 477) becomes available, it will be included in future reports on the deployment of advanced telecommunications capability and in publications such as this one.

We invite users of this information to provide suggestions for improved data collection and analysis by:

- Using the attached customer response form,
- E-mailing comments to James.Eisner@fcc.gov,
- Calling the Industry Analysis and Technology Division of the Wireline Competition Bureau at (202) 418-0940, or
- Participating in any formal proceedings undertaken by the Commission to solicit comments for improvement of FCC Form 477.

Table 1
High-Speed Lines ¹
(Over 200 kbps in at Least One Direction)

Types of Technology ²	Dec 1999	Jun 2000	Dec 2000	Jun 2001	Dec 2001	Jun 2002	Dec 2002	Jun 2003	Percent Change	
									June 2002 -	Dec 2002 -
									Dec 2002	Jun 2003
ADSL	369,792	951,583	1,977,101	2,693,834	3,947,808	5,101,493	6,471,716	7,675,114	27 %	19 %
Other Wireline	609,909	758,594	1,021,291	1,088,066	1,078,597	1,186,680	1,216,208	1,215,713	2	0
Coaxial Cable	1,411,977	2,284,491	3,582,874	5,184,141	7,059,598	9,172,895	11,369,087	13,684,225	24	20
Fiber	312,204	307,151	376,203	455,593	494,199	520,884	548,471	575,613	5	5
Satellite or Fixed Wireless	50,404	65,615	112,405	194,707	212,610	220,588	276,067	309,006	25	12
Total Lines	2,754,286	4,367,434	7,069,874	9,616,341	12,792,812	16,202,540	19,881,549	23,459,671	23 %	18 %

Table 2
Advanced Services Lines ¹
(Over 200 kbps in Both Directions)

Types of Technology ²	Dec 1999	Jun 2000	Dec 2000	Jun 2001	Dec 2001	Jun 2002	Dec 2002	Jun 2003	Percent Change	
									June 2002 -	Dec 2002 -
									Dec 2002	Jun 2003
ADSL	185,950	326,816	675,366	998,883	1,369,143	1,852,879	2,178,394	2,536,368	18 %	16 %
Other Wireline	609,909	758,594	1,021,291	1,088,066	1,078,597	1,186,680	1,216,208	1,215,713	2	0
Coaxial Cable	877,465	1,469,130	2,193,609	3,329,976	4,394,778	6,819,395	8,342,234	11,935,866	22	43
Fiber	307,315	301,143	376,197	455,549	486,483	518,908	548,123	575,057	6	5
Satellite or Fixed Wireless	7,816	3,649	26,906	73,476	75,341	66,073	65,929	64,393	0	-2
Total Lines	1,988,455	2,859,332	4,293,369	5,945,950	7,404,343	10,443,935	12,350,888	16,327,396	18 %	32 %

Note: Some previously published data for December 2002 have been revised.

¹ A high-speed line is a connection to an end-user customer that is faster than 200 kbps in at least one direction. Advanced services lines, which are a subset of high-speed lines, are connections to end-user customers that are faster than 200 kbps in both directions. The speed of the purchased service varies among end-user customers. For example, a high-speed service delivered to the end-user customer over other traditional wireline technology, such as DS1 or DS3 service, or over optical fiber to the end user's premises may be much faster than the ADSL or cable modem service purchased by a different, or by the same, end user. Numbers of lines reported here are not adjusted for the speed of the service delivered over the line or the number of end users able to utilize the lines.

² The mutually exclusive types of technology are, respectively: Asymmetric digital subscriber line (ADSL) technologies, which provide speeds in one direction greater than speeds in the other direction; wireline technologies "other" than ADSL, including traditional telephone company high-speed services and symmetric DSL services that provide equivalent functionality; coaxial cable, including the typical hybrid fiber-coax (HFC) architecture of upgraded cable TV systems; optical fiber to the subscriber's premises (e.g., Fiber-to-the-Home, or FTTH); and satellite and (terrestrial) fixed wireless systems, which use radio spectrum to communicate with a radio transmitter at the subscriber's premises.

Table 3
Residential and Small Business High-Speed Lines ¹
(Over 200 kbps in at Least One Direction)

Types of Technology ²	Dec 1999	Jun 2000	Dec 2000	Jun 2001	Dec 2001	Jun 2002	Dec 2002	Jun 2003	Percent Change	
									June 2002 -	Dec 2002 -
									Dec 2002	Jun 2003
ADSL	291,757	772,272	1,594,879	2,490,740	3,615,989	4,395,033	5,529,241	6,429,938	26 %	16 %
Other Wireline	46,856	111,490	176,520	138,307	139,660	223,599	213,489	250,372	-5	17
Coaxial Cable	1,402,394	2,215,259	3,294,546	4,998,540	7,050,709	9,157,285	11,342,512	13,660,541	24	20
Fiber	1,023	325	1,994	2,623	4,139	6,120	14,692	16,132	NM	NM
Satellite or Fixed Wireless	50,189	64,320	102,432	182,165	194,897	202,251	256,978	288,786	27	12
Total Lines	1,792,219	3,163,666	5,170,371	7,812,375	11,005,396	13,984,287	17,356,912	20,645,769	24 %	19 %

Table 4
Residential and Small Business Advanced Services Lines ¹
(Over 200 kbps in Both Directions)

Types of Technology ²	Dec 1999	Jun 2000	Dec 2000	Jun 2001	Dec 2001	Jun 2002	Dec 2002	Jun 2003	Percent Change	
									Dec 2001 -	Jun 2002 -
									Jun 2002	Dec 2002
ADSL	116,994	195,324	393,246	916,364	1,243,996	1,580,575	1,827,547	2,071,779	16 %	13 %
Other Wireline	46,856	111,490	176,520	138,307	139,660	223,599	213,489	250,372	-5	17
Coaxial Cable	872,024	1,401,434	2,177,328	3,146,953	4,388,967	6,809,170	8,322,157	11,920,207	22	43
Fiber	138	325	1,992	2,617	3,523	5,118	14,408	15,751	NM	NM
Satellite or Fixed Wireless	7,682	2,916	17,043	60,988	58,113	47,787	47,903	46,407	0	-3
Total Lines	1,043,694	1,711,488	2,766,130	4,265,229	5,834,258	8,666,249	10,425,505	14,304,515	20 %	37 %

Notes: Some previously published data for December 2002 have been revised. Residential and small business advanced services lines are estimated based on data from FCC Form 477.

NM - Not meaningful due to small number of lines.

¹ A high-speed line is a connection to an end-user customer that is faster than 200 kbps in at least one direction. Advanced services lines, which are a subset of high-speed lines, are connections to end-user customers that are faster than 200 kbps in both directions. The speed of the purchase service varies among end-user customers. For example, a high-speed service delivered to the end-user customer over other traditional wireline technology, such as DS1 or DS3 service, or over optical fiber to the end user's premises may be much faster than the ADSL or cable modem service purchased by a different, or by the same, end user. Numbers of lines reported here are not adjusted for the speed of the service delivered over the line or the number of end users able to utilize the lines.

² The mutually exclusive types of technology are, respectively: Asymmetric digital subscriber line (ADSL) technologies, which provide speeds in one direction greater than speeds in the other direction; wireline technologies "other" than ADSL, including traditional telephone company high-speed services and symmetric DSL services that provide equivalent functionality; coaxial cable, including the typical hybrid fiber-coax (HFC) architecture of upgraded cable TV systems; optical fiber to the subscriber's premises (e.g., Fiber-to-the-Home, or FTTH); and satellite and (terrestrial) fixed wireless systems, which use radio spectrum to communicate with a radio transmitter at the subscriber's premises.

Table 5
High-Speed Lines by Type of Provider as of June 30, 2003
(Over 200 kbps in at Least One Direction)

Types of Technology ¹	Lines				Percent of Lines		
	RBOC ²	Other ILEC	Non-ILEC ³	Total	RBOC ²	Other ILEC	Non-ILEC ³
ADSL	6,490,190	774,223	410,701	7,675,114	84.6 %	10.1 %	5.4 %
Other Wireline	710,451	153,590	351,672	1,215,713	58.4	12.6	28.9
Coaxial Cable	*	*	13,661,872	13,684,225	*	*	99.6
Other	*	*	819,833	884,619	*	*	92.7
Total Lines	7,266,765	948,828	15,244,078	23,459,671	31.0 %	4.0 %	65.0 %

* Data withheld to maintain firm confidentiality.

¹ The mutually exclusive types of technology are, respectively: Asymmetric digital subscriber line (ADSL) technologies, which provide speeds in one direction greater than speeds in the other direction; wireline technologies "other" than ADSL, including traditional telephone company high-speed services and symmetric DSL services that provide equivalent functionality; coaxial cable, including the typical hybrid fiber-coax (HFC) architecture of upgraded cable TV systems; optical fiber to the subscriber's premises (e.g., Fiber-to-the-Home, or FTTH); and satellite and (terrestrial) fixed wireless systems, which use radio spectrum to communicate with a radio transmitter at the subscriber's premises.

² "RBOC" lines include all high-speed lines reported by BellSouth, SBC, and Verizon, and all high-speed lines reported by Qwest in states in which Qwest has ILEC operations.

³ High-speed lines reported by competitive local exchange carrier (CLEC) or cable TV operations that are affiliated with a local exchange carrier are included in "Non-ILEC" lines, except for any such lines that are included in "RBOC" lines.

Table 6
Providers of High-Speed Lines by Technology as of June 30, 2003
(Over 200 kbps in at Least One Direction)

	ADSL	Coaxial Cable	Other ¹	Total (Unduplicated)
Alabama	7	10	13	22
Alaska	6	*	5	9
Arizona	7	5	14	21
Arkansas	7	*	8	14
California	16	10	24	37
Colorado	6	4	13	18
Connecticut	5	5	12	17
Delaware	*	*	4	7
District of Columbia	5	*	8	9
Florida	11	9	25	33
Georgia	14	8	28	35
Hawaii	*	*	*	*
Idaho	6	*	6	11
Illinois	17	4	22	32
Indiana	12	8	17	26
Iowa	18	13	24	36
Kansas	14	14	22	34
Kentucky	9	6	11	21
Louisiana	8	4	12	18
Maine	4	*	7	12
Maryland	6	9	10	20
Massachusetts	7	7	15	22
Michigan	14	8	20	32
Minnesota	20	11	25	41
Mississippi	5	6	8	16
Missouri	11	9	15	25
Montana	9	*	7	17
Nebraska	10	6	13	20
Nevada	7	*	9	13
New Hampshire	5	4	9	14
New Jersey	5	5	13	17
New Mexico	6	4	7	13
New York	16	8	22	33
North Carolina	16	7	18	29
North Dakota	16	4	16	22
Ohio	16	12	23	32
Oklahoma	9	*	15	20
Oregon	13	5	15	24
Pennsylvania	16	9	19	32
Puerto Rico	*	*	*	4
Rhode Island	*	*	7	7
South Carolina	13	9	14	23
South Dakota	11	4	9	19
Tennessee	16	8	18	33
Texas	27	9	32	47
Utah	9	*	14	18
Vermont	6	*	8	11
Virgin Islands	*	0	*	*
Virginia	9	5	16	22
Washington	12	6	18	24
West Virginia	*	5	5	11
Wisconsin	13	5	16	25
Wyoming	5	*	5	8
Nationwide (Unduplicated) Jun 2003	235	98	217	378
Nationwide (Unduplicated) Dec 2002	178	87	169	299
Nationwide (Unduplicated) Jun 2002	142	68	138	237
Nationwide (Unduplicated) Dec 2001	117	59	122	203
Nationwide (Unduplicated) Jun 2001	86	47	98	160
Nationwide (Unduplicated) Dec 2000	68	39	87	136
Nationwide (Unduplicated) Jun 2000	47	36	75	116
Nationwide (Unduplicated) Dec 1999	28	43	65	105

* Data withheld to maintain firm confidentiality. In this table, an asterisk also indicates 1-3 providers reporting.

¹ Other includes wireline technologies other than asymmetric digital subscriber line (ADSL), optical fiber to the subscriber's premises, satellite, and (terrestrial) fixed wireless systems.

Table 7
High-Speed Lines by Technology as of June 30, 2003
(Over 200 kbps in at Least One Direction)

	ADSL	Coaxial Cable	Other ¹	Total
Alabama	70,639	181,338	31,969	283,946
Alaska	14,013	*	*	61,121
Arizona	77,368	319,272	48,539	445,179
Arkansas	44,801	*	*	128,311
California	1,715,998	1,395,435	345,248	3,456,681
Colorado	126,189	181,766	36,199	344,154
Connecticut	124,742	227,658	15,786	368,186
Delaware	*	*	3,386	55,030
District of Columbia	39,471	*	*	70,715
Florida	644,621	867,513	141,403	1,653,537
Georgia	368,372	289,922	109,766	768,060
Hawaii	*	*	*	*
Idaho	19,382	*	*	64,353
Illinois	363,733	383,069	124,667	871,469
Indiana	85,968	122,338	28,724	237,030
Iowa	39,386	111,748	11,123	162,257
Kansas	50,839	181,437	16,520	248,796
Kentucky	75,316	23,672	22,606	121,594
Louisiana	100,919	189,920	24,851	315,690
Maine	11,052	*	*	85,615
Maryland	126,873	306,442	36,511	469,826
Massachusetts	207,344	564,961	48,830	821,135
Michigan	135,360	543,336	58,059	736,755
Minnesota	115,244	255,988	29,138	400,370
Mississippi	33,650	50,234	12,227	96,111
Missouri	138,046	191,658	37,274	366,978
Montana	13,119	*	*	28,023
Nebraska	18,285	111,903	10,984	141,172
Nevada	47,934	*	*	209,732
New Hampshire	17,823	95,612	5,444	118,879
New Jersey	211,540	690,620	65,680	967,840
New Mexico	26,948	38,004	7,017	71,969
New York	438,241	1,401,322	157,777	1,997,340
North Carolina	161,642	454,272	65,390	681,304
North Dakota	11,593	10,066	3,815	25,474
Ohio	243,689	508,458	69,788	821,935
Oklahoma	78,248	*	*	234,823
Oregon	95,654	197,794	25,012	318,460
Pennsylvania	230,322	482,471	59,483	772,276
Puerto Rico	*	*	*	32,063
Rhode Island	*	*	4,391	105,610
South Carolina	52,667	185,083	25,118	262,868
South Dakota	8,637	9,156	4,223	22,016
Tennessee	92,777	277,579	44,357	414,713
Texas	597,447	888,595	124,893	1,610,935
Utah	65,648	*	*	135,007
Vermont	15,072	*	*	39,773
Virgin Islands	*	0	*	*
Virginia	114,797	404,616	48,100	567,513
Washington	225,377	313,915	38,086	577,378
West Virginia	*	73,263	*	90,173
Wisconsin	84,100	287,519	30,376	401,995
Wyoming	5,503	*	*	17,507
Nationwide	7,675,114	13,684,225	2,100,332	23,459,671

* Data withheld to maintain firm confidentiality.

¹ Other includes wireline technologies other than asymmetric digital subscriber line (ADSL), optical fiber to the subscriber's premises, satellite, and (terrestrial) fixed wireless systems.

Table 8
High-Speed Lines by State
(Over 200 kbps in at Least One Direction)

	Dec 1999	Jun 2000	Dec 2000	Jun 2001	Dec 2001	Jun 2002	Dec 2002	Jun 2003
Alabama	19,796	32,756	63,334	86,234	138,979	172,365	227,888	283,946
Alaska	*	*	934	20,906	50,277	46,791	55,975	61,121
Arizona	58,825	111,678	153,500	158,122	251,709	308,621	370,939	445,179
Arkansas	8,155	15,539	28,968	40,803	66,537	84,235	100,280	128,311
California	547,179	910,006	1,386,625	1,705,814	2,041,276	2,598,491	3,035,756	3,456,681
Colorado	36,726	64,033	104,534	147,220	177,419	243,810	298,265	344,154
Connecticut	36,488	63,772	111,792	149,057	191,257	236,490	307,860	368,186
Delaware	1,558	3,660	7,492	12,771	26,601	36,619	51,100	55,030
District of Columbia	13,288	16,926	27,757	39,101	43,278	55,197	64,310	70,715
Florida	190,700	244,678	460,795	651,167	911,261	1,119,693	1,405,976	1,653,537
Georgia	75,870	130,292	203,855	302,598	420,206	512,135	654,833	768,060
Hawaii	*	*	*	*	*	*	*	*
Idaho	*	8,070	15,908	20,233	18,445	43,119	54,963	64,353
Illinois	77,672	166,933	242,239	350,241	422,706	553,442	734,171	871,469
Indiana	20,059	49,702	60,494	80,364	123,704	159,392	205,946	237,030
Iowa	19,258	49,159	58,199	72,583	82,024	102,932	121,053	162,257
Kansas	26,179	42,679	68,743	101,734	125,963	149,733	193,568	248,796
Kentucky	23,570	24,237	32,731	39,297	67,870	90,284	99,265	121,594
Louisiana	28,133	43,294	74,950	121,685	164,760	207,257	262,093	315,690
Maine	19,878	17,864	26,266	38,149	49,523	61,406	73,061	85,615
Maryland	52,749	71,005	124,465	181,021	260,634	316,666	391,397	469,826
Massachusetts	114,116	185,365	289,447	357,256	505,819	583,627	679,084	821,135
Michigan	81,223	135,318	198,230	395,583	433,858	538,416	640,766	736,755
Minnesota	38,268	65,272	117,283	148,012	199,856	273,907	335,562	400,370
Mississippi	*	6,514	12,305	21,517	35,586	57,595	80,922	96,111
Missouri	23,347	46,903	100,403	123,915	181,794	224,282	260,752	366,978
Montana	*	*	7,378	10,446	13,037	17,969	20,090	28,023
Nebraska	36,748	44,188	54,085	55,188	71,451	92,849	117,219	141,172
Nevada	23,514	40,582	59,879	78,535	109,850	138,042	159,179	209,732
New Hampshire	22,807	33,045	42,364	55,658	71,200	86,200	102,590	118,879
New Jersey	101,832	144,203	285,311	428,514	590,192	693,036	839,095	967,840
New Mexico	*	2,929	28,497	20,482	31,940	44,942	57,956	71,969
New York	186,504	342,743	603,487	893,032	1,199,159	1,460,894	1,725,296	1,997,340
North Carolina	57,881	81,998	136,703	205,616	357,906	461,736	594,039	681,304
North Dakota	*	2,437	4,227	6,277	6,082	14,164	20,024	25,474
Ohio	160,792	156,980	230,525	358,965	436,766	580,078	710,355	821,935
Oklahoma	96,730	163,703	95,138	92,947	114,931	151,213	196,556	234,823
Oregon	27,062	44,186	76,839	93,242	158,048	199,549	275,449	318,460
Pennsylvania	71,926	79,892	176,670	263,236	376,439	516,488	631,717	772,276
Puerto Rico	*	*	*	*	*	*	22,732	32,063
Rhode Island	*	20,628	30,919	49,215	64,293	72,553	89,821	105,610
South Carolina	25,229	32,824	63,914	96,839	135,165	175,088	222,980	262,868
South Dakota	*	3,516	2,839	5,448	9,585	12,555	18,060	22,016
Tennessee	66,307	87,317	122,391	152,510	237,401	294,573	369,370	414,713
Texas	152,518	276,087	522,538	646,839	840,665	1,050,511	1,349,628	1,610,935
Utah	11,635	19,612	35,970	55,103	72,977	93,928	121,744	135,007
Vermont	*	1,551	7,773	16,230	21,795	29,990	32,814	39,773
Virgin Islands	0	*	*	*	*	*	*	*
Virginia	51,305	72,436	139,915	212,808	292,772	360,722	463,455	567,513
Washington	71,930	118,723	195,628	227,066	335,667	422,348	485,063	577,378
West Virginia	*	1,835	6,498	16,697	32,848	58,209	78,980	90,173
Wisconsin	18,599	34,262	76,257	127,755	182,395	257,099	335,991	401,995
Wyoming	*	*	*	*	7,856	10,990	14,696	17,507
Nationwide	2,754,286	4,367,434	7,069,874	9,616,341	12,792,812	16,202,540	19,881,549	23,459,671

* Data withheld to maintain firm confidentiality.

Table 9
ADSL High-Speed Lines by State
(Over 200 kbps in at Least One Direction)

	Dec 1999	Jun 2000	Dec 2000	Jun 2001	Dec 2001	Jun 2002	Dec 2002	Jun 2003
Alabama	*	*	12,320	*	34,785	45,350	56,860	70,639
Alaska	0	0	0	*	7,975	11,337	14,295	14,013
Arizona	*	*	32,395	39,828	53,489	68,280	72,324	77,368
Arkansas	*	*	*	*	22,240	28,477	35,594	44,801
California	122,855	373,574	622,894	735,677	928,345	1,214,543	1,485,309	1,715,998
Colorado	*	*	42,810	52,617	70,615	100,197	113,040	126,189
Connecticut	*	*	22,348	30,142	41,261	61,093	100,722	124,742
Delaware	*	*	*	*	*	*	*	*
District of Columbia	*	*	*	16,313	*	28,723	35,466	39,471
Florida	*	37,806	115,133	170,702	306,015	391,188	521,623	644,621
Georgia	*	*	56,588	106,649	172,556	237,922	305,004	368,372
Hawaii	*	*	*	*	*	*	*	*
Idaho	*	*	*	*	13,643	16,108	17,930	19,382
Illinois	3,150	12,812	48,278	89,080	110,448	195,560	300,497	363,733
Indiana	*	*	6,442	2,375	22,385	36,685	63,463	85,968
Iowa	*	*	*	9,532	13,193	18,751	29,161	39,386
Kansas	0	*	14,281	*	23,564	28,713	39,315	50,839
Kentucky	5,690	*	16,327	20,256	43,191	55,454	55,254	75,316
Louisiana	*	*	22,788	37,444	58,019	73,120	86,359	100,919
Maine	0	*	*	6,877	*	*	8,432	11,052
Maryland	*	*	*	51,051	79,997	95,439	115,687	126,873
Massachusetts	*	15,802	53,700	82,699	125,630	147,139	181,426	207,344
Michigan	786	*	25,482	41,428	52,505	80,588	111,182	135,360
Minnesota	*	25,975	40,870	51,640	67,527	86,184	98,316	115,244
Mississippi	*	*	*	*	*	*	*	33,650
Missouri	*	*	38,759	53,250	68,186	84,642	114,861	138,046
Montana	*	*	1,760	2,842	4,272	7,108	6,549	13,119
Nebraska	*	*	*	9,293	13,637	11,547	16,117	18,285
Nevada	*	*	10,023	*	17,598	24,073	36,662	47,934
New Hampshire	*	*	3,339	5,651	9,618	11,781	14,630	17,823
New Jersey	*	*	59,332	102,430	151,829	172,472	197,615	211,540
New Mexico	*	*	*	7,578	*	18,224	22,607	26,948
New York	9,307	41,656	124,146	197,135	285,814	338,229	391,686	438,241
North Carolina	*	8,662	23,815	41,332	65,582	89,680	124,031	161,642
North Dakota	*	*	*	*	4,849	6,575	8,826	11,593
Ohio	*	33,603	55,046	87,567	112,527	151,612	205,140	243,689
Oklahoma	*	*	*	31,321	39,978	50,617	65,378	78,248
Oregon	*	19,989	31,644	25,877	57,899	68,747	82,555	95,654
Pennsylvania	7,377	18,313	60,083	89,595	136,829	162,258	200,501	230,322
Puerto Rico	0	0	0	*	*	*	*	*
Rhode Island	0	*	*	*	*	*	*	*
South Carolina	*	*	5,168	9,704	18,686	26,184	38,293	52,667
South Dakota	*	*	*	1,652	2,869	4,389	6,308	8,637
Tennessee	*	*	13,705	22,902	42,571	57,984	74,034	92,777
Texas	*	73,117	158,513	197,668	300,752	368,796	486,833	597,447
Utah	*	*	17,352	23,476	33,306	47,637	57,025	65,648
Vermont	0	*	*	*	*	9,409	12,062	15,072
Virgin Islands	0	0	0	*	*	*	*	*
Virginia	7,425	9,510	26,750	39,114	65,298	75,524	96,805	114,797
Washington	*	52,345	79,130	64,812	140,273	172,652	200,189	225,377
West Virginia	0	*	*	*	*	*	*	*
Wisconsin	*	1,063	8,623	17,800	28,233	42,052	64,521	84,100
Wyoming	*	*	*	*	*	*	*	5,503
Nationwide	369,792	951,583	1,977,101	2,693,834	3,947,808	5,101,493	6,471,716	7,675,114

* Data withheld to maintain firm confidentiality.

Table 10
Coaxial Cable High-Speed Lines by State
(Over 200 kbps in at Least One Direction)

	Dec 1999	Jun 2000	Dec 2000	Jun 2001	Dec 2001	June 2002	Dec 2002	Jun 2003
Alabama	8,415	17,164	36,432	47,325	83,933	104,990	144,259	181,338
Alaska	0	0	0	0	*	*	*	*
Arizona	*	*	*	*	151,916	194,431	251,373	319,272
Arkansas	*	*	*	*	*	*	*	*
California	221,472	297,415	476,544	609,174	786,789	1,013,503	1,179,204	1,395,435
Colorado	*	*	*	*	*	*	*	181,766
Connecticut	28,702	47,127	78,234	106,019	137,003	160,913	192,155	227,658
Delaware	*	*	*	*	*	*	*	*
District of Columbia	*	*	*	*	*	*	*	*
Florida	110,000	129,830	255,978	372,190	486,977	595,806	741,426	867,513
Georgia	18,114	48,947	75,474	109,922	156,142	183,886	243,142	289,922
Hawaii	*	*	*	*	0	*	*	*
Idaho	0	*	*	*	*	*	*	*
Illinois	*	83,737	126,490	144,872	204,202	242,394	316,169	383,069
Indiana	7,412	33,431	37,052	56,441	78,837	98,414	114,237	122,338
Iowa	14,027	42,081	48,008	59,253	63,788	77,592	83,994	111,748
Kansas	*	*	48,541	74,337	94,047	111,615	142,563	181,437
Kentucky	*	*	*	*	*	12,867	22,113	23,672
Louisiana	*	*	*	64,219	88,851	115,198	*	189,920
Maine	*	*	*	*	*	*	*	*
Maryland	*	42,412	65,668	97,466	143,174	181,864	241,264	306,442
Massachusetts	*	148,233	210,019	243,670	339,244	391,391	453,473	564,961
Michigan	51,111	94,586	130,296	301,842	329,697	402,642	472,405	543,336
Minnesota	14,346	30,485	64,215	80,259	113,900	166,323	212,126	255,988
Mississippi	*	*	*	*	12,998	27,872	40,276	50,234
Missouri	*	16,482	42,255	51,733	89,370	110,026	117,403	191,658
Montana	0	*	*	*	*	*	*	*
Nebraska	*	*	*	37,168	49,939	73,306	92,261	111,903
Nevada	*	*	*	*	*	*	*	*
New Hampshire	*	*	*	*	*	*	*	95,612
New Jersey	*	*	*	*	375,362	454,750	578,337	690,620
New Mexico	0	0	*	*	*	*	*	38,004
New York	110,382	*	377,521	564,423	780,473	967,949	1,185,233	1,401,322
North Carolina	24,200	42,713	73,092	115,949	239,107	313,884	406,024	454,272
North Dakota	0	*	*	*	*	*	*	10,066
Ohio	*	*	127,692	213,606	264,031	363,675	435,404	508,458
Oklahoma	*	*	*	*	*	*	*	*
Oregon	*	*	*	*	*	*	165,343	197,794
Pennsylvania	34,878	38,340	85,104	131,119	190,915	300,840	376,611	482,471
Puerto Rico	0	0	0	0	0	0	*	*
Rhode Island	*	*	*	*	*	*	*	*
South Carolina	15,176	20,190	44,812	68,487	96,559	126,598	159,944	185,083
South Dakota	0	*	*	*	*	*	7,916	9,156
Tennessee	*	*	77,760	96,119	158,120	199,121	252,596	277,579
Texas	76,520	137,670	227,070	328,900	427,324	577,233	740,469	888,595
Utah	*	*	*	*	*	*	*	*
Vermont	*	*	*	*	*	*	*	*
Virgin Islands	0	0	0	0	0	0	0	0
Virginia	23,140	40,337	78,585	131,553	182,591	238,300	320,154	404,616
Washington	*	*	*	*	*	217,644	246,627	313,915
West Virginia	*	*	*	*	*	48,858	65,542	73,263
Wisconsin	*	*	*	*	*	189,585	243,043	287,519
Wyoming	0	0	*	*	*	*	*	*
Nationwide	1,411,977	2,284,491	3,582,874	5,184,141	7,059,598	9,172,895	11,369,087	13,684,225

* Data withheld to maintain firm confidentiality.

Table 11
High-Speed Lines by Type of User as of June 30, 2003
(Over 200 kbps in at Least One Direction)

	Residential & Small Business	Other ¹	Total
Alabama	246,373	37,573	283,946
Alaska	56,018	5,103	61,121
Arizona	427,448	17,731	445,179
Arkansas	123,138	5,173	128,311
California	2,994,812	461,869	3,456,681
Colorado	316,730	27,424	344,154
Connecticut	350,622	17,564	368,186
Delaware	47,712	7,318	55,030
District of Columbia	44,865	25,850	70,715
Florida	1,387,008	266,529	1,653,537
Georgia	601,791	166,269	768,060
Hawaii	*	*	*
Idaho	61,076	3,277	64,353
Illinois	758,891	112,578	871,469
Indiana	194,239	42,791	237,030
Iowa	154,371	7,886	162,257
Kansas	236,543	12,253	248,796
Kentucky	93,951	27,643	121,594
Louisiana	277,481	38,209	315,690
Maine	76,964	8,651	85,615
Maryland	401,976	67,850	469,826
Massachusetts	725,018	96,117	821,135
Michigan	683,706	53,049	736,755
Minnesota	377,701	22,669	400,370
Mississippi	80,297	15,814	96,111
Missouri	331,679	35,299	366,978
Montana	26,128	1,895	28,023
Nebraska	137,508	3,664	141,172
Nevada	189,378	20,354	209,732
New Hampshire	107,244	11,635	118,879
New Jersey	838,225	129,615	967,840
New Mexico	66,540	5,429	71,969
New York	1,728,124	269,216	1,997,340
North Carolina	596,289	85,015	681,304
North Dakota	24,411	1,063	25,474
Ohio	742,970	78,965	821,935
Oklahoma	220,584	14,239	234,823
Oregon	290,128	28,332	318,460
Pennsylvania	652,903	119,373	772,276
Puerto Rico	20,495	11,568	32,063
Rhode Island	95,900	9,710	105,610
South Carolina	233,556	29,312	262,868
South Dakota	20,985	1,031	22,016
Tennessee	361,510	53,203	414,713
Texas	1,464,934	146,001	1,610,935
Utah	125,890	9,117	135,007
Vermont	35,118	4,655	39,773
Virgin Islands	*	*	*
Virginia	492,714	74,799	567,513
Washington	509,981	67,397	577,378
West Virginia	82,005	8,168	90,173
Wisconsin	373,205	28,790	401,995
Wyoming	16,435	1,072	17,507
Nationwide	20,645,769	2,813,902	23,459,671

* Data withheld to maintain firm confidentiality.

¹ Other includes medium and large business, institutional, and government customers.

Table 12
Percentage of Zip Codes with High-Speed Lines in Service

Number of Providers	Dec 1999	Jun 2000	Dec 2000	Jun 2001	Dec 2001	Jun 2002	Dec 2002	Jun 2003
Zero	40.3 %	33.0 %	26.8 %	22.2 %	20.6 %	16.1 %	12.0 %	9.0 %
One	26.0	25.9	22.7	20.3	19.3	18.4	17.3	16.4
Two	15.5	17.8	18.4	16.7	15.7	16.2	16.8	16.9
Three	8.2	9.2	10.9	13.2	13.1	13.3	14.4	14.0
Four	4.3	4.9	6.1	8.2	9.1	9.6	10.3	10.6
Five	2.7	3.4	4.0	4.9	6.1	6.9	7.3	7.7
Six	1.7	2.5	3.0	3.6	4.2	4.6	5.0	5.3
Seven	0.8	1.7	2.3	2.8	3.2	3.2	3.9	4.0
Eight	0.3	0.8	2.0	2.2	2.5	2.8	2.7	3.1
Nine	0.2	0.4	1.6	1.9	2.0	2.4	2.2	2.5
Ten or More	0.0	0.4	2.4	3.9	4.0	6.4	8.0	10.5

High-Speed Providers by Zip Code (As of June 30, 2003)

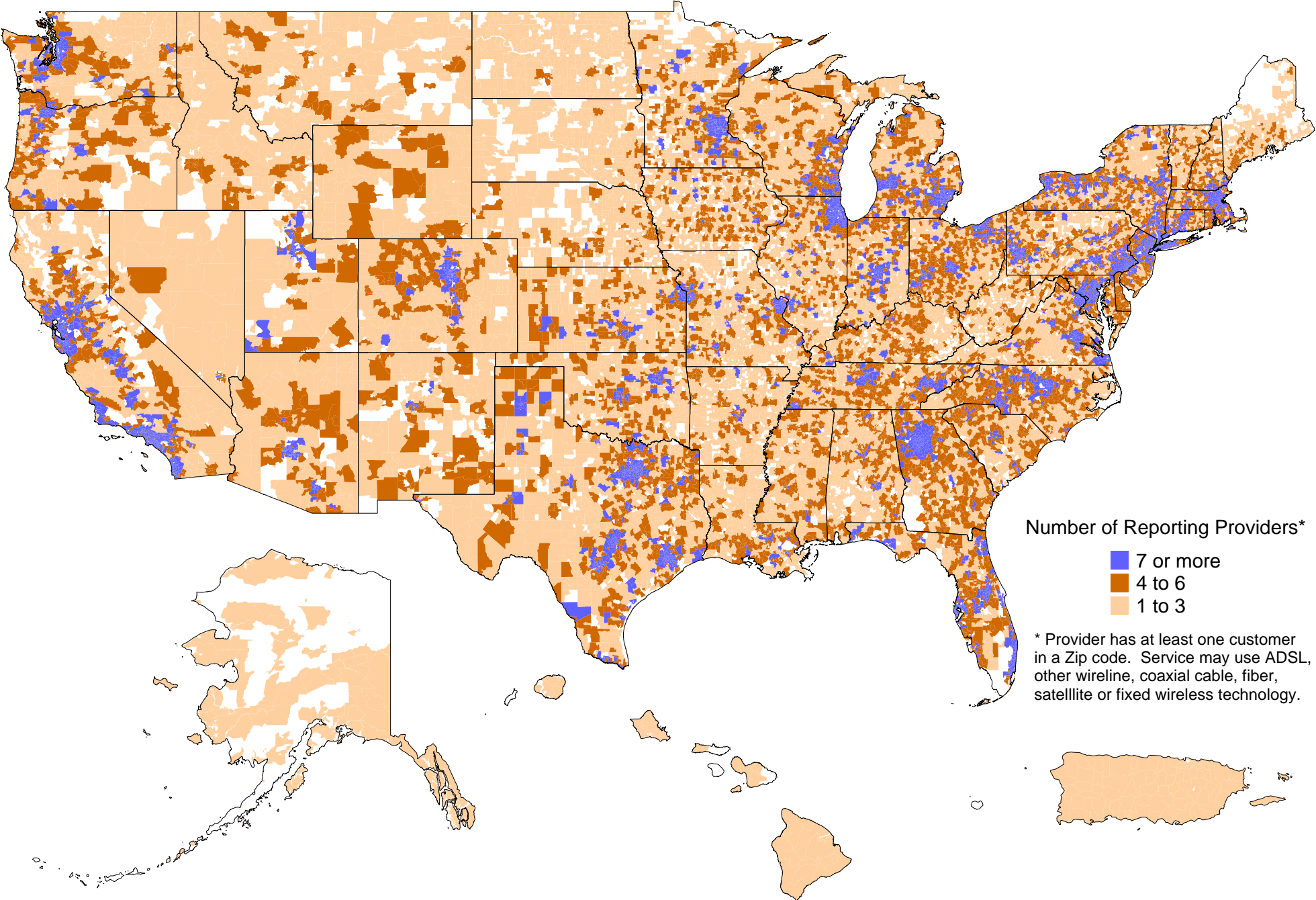


Table 13
Percentage of Zip Codes with High-Speed Lines in Service as of June 30, 2003
(Over 200 kbps in at Least One Direction)

	Number of Providers										
	Zero	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten or More
Alabama	10 %	15 %	20 %	21 %	17 %	9 %	4 %	3 %	1 %	0 %	0 %
Alaska	17	60	16	6	1	0	0	0	0	0	0
Arizona	2	6	13	18	7	8	6	5	3	6	25
Arkansas	20	27	23	13	7	4	3	2	0	0	0
California	3	6	11	11	8	6	5	5	5	5	36
Colorado	4	14	18	15	10	5	5	3	3	3	19
Connecticut	0	3	12	14	10	8	10	6	5	7	23
Delaware	0	0	4	18	32	33	14	0	0	0	0
District of Columbia	4	0	11	4	0	7	7	4	15	48	0
Florida	1	2	6	10	12	11	9	8	5	6	28
Georgia	5	9	11	14	18	13	6	5	2	1	17
Hawaii	13	44	27	15	0	0	0	0	0	0	0
Idaho	14	30	20	17	8	10	0	0	0	0	0
Illinois	10	19	20	12	7	5	4	3	2	2	17
Indiana	7	20	19	16	11	8	7	4	2	1	5
Iowa	24	24	20	11	9	7	3	1	0	0	0
Kansas	10	22	23	15	10	6	4	4	4	1	1
Kentucky	22	26	18	13	10	6	4	1	0	0	0
Louisiana	8	17	20	17	12	12	7	4	2	0	0
Maine	14	23	30	16	11	3	2	0	0	0	0
Maryland	2	7	12	12	13	9	7	5	4	3	25
Massachusetts	0	2	8	10	15	11	9	6	7	4	27
Michigan	2	10	16	18	12	8	8	4	4	3	15
Minnesota	17	21	14	12	10	5	3	3	2	2	10
Mississippi	7	23	22	20	16	6	4	1	1	0	0
Missouri	16	22	20	13	7	5	2	4	4	4	3
Montana	25	30	20	13	5	5	2	0	0	0	0
Nebraska	22	29	22	11	9	4	3	0	0	0	0
Nevada	7	29	15	9	22	4	9	5	0	0	0
New Hampshire	2	12	14	19	18	14	7	5	8	0	1
New Jersey	0	3	5	10	12	15	10	12	13	11	10
New Mexico	19	26	24	8	11	3	4	5	0	0	0
New York	2	10	12	13	13	10	7	6	6	4	16
North Carolina	2	11	14	19	18	13	7	4	3	2	8
North Dakota	20	54	21	3	2	1	0	0	0	0	0
Ohio	3	10	16	18	14	13	8	4	3	4	8
Oklahoma	9	21	20	16	9	6	6	7	5	1	0
Oregon	6	11	20	15	14	7	7	4	3	5	7
Pennsylvania	10	15	15	13	10	8	6	5	3	3	13
Puerto Rico	0	8	62	30	0	0	0	0	0	0	0
Rhode Island	0	6	6	15	15	15	24	19	0	0	0
South Carolina	7	15	16	18	15	15	8	4	2	0	0
South Dakota	32	30	24	10	3	2	0	0	0	0	0
Tennessee	3	12	19	16	15	12	5	5	4	2	6
Texas	6	12	15	12	9	8	7	5	5	4	17
Utah	10	18	15	13	9	5	1	3	2	3	21
Vermont	7	25	28	19	9	7	4	0	0	0	0
Virginia	10	17	19	18	9	6	4	2	3	2	12
Washington	5	10	16	16	8	6	7	6	6	4	16
West Virginia	23	32	18	14	8	4	1	0	0	0	0
Wisconsin	5	14	21	19	13	8	7	8	4	1	0
Wyoming	13	28	25	20	5	8	1	0	0	0	0
Nationwide	9 %	16 %	17 %	14 %	11 %	8 %	5 %	4 %	3 %	3 %	11 %

Table 14
High-Speed Subscribership
Ranked by Population Density

Persons per Square Mile ¹	Percent of Zip Codes with at Least One High-Speed Subscriber				Percent of Population that Resides in Zip Codes with High-Speed Service			
	Jun 2000	Jun 2001	Jun 2002	Jun 2003	Jun 2000	Jun 2001	Jun 2002	Jun 2003 ²
More Than 3,147	97.3 %	98.1 %	98.7 %	98.9 %	99.7 %	99.9 %	99.8 %	100.0 %
947-3,147	95.8	97.1	98.2	98.2	99.4	99.8	99.9	99.9
268-947	93.4	95.6	97.5	98.4	98.4	99.5	99.9	99.9
118-268	86.7	92.3	95.2	96.9	95.9	98.8	99.5	99.7
67-118	77.9	87.5	93.0	96.4	90.2	96.8	98.5	99.4
41-67	65.4	80.9	88.0	93.8	81.2	93.0	96.3	98.5
25-41	54.5	72.8	81.0	90.4	71.4	87.3	92.2	96.9
15-25	39.2	58.9	70.0	83.3	59.9	78.4	86.5	93.3
6-15	31.3	51.1	60.9	77.3	56.6	74.6	81.9	90.3
Fewer Than 6	23.0	36.8	49.6	68.5	43.9	60.7	72.6	85.7

Table 15
High-Speed Subscribership
Ranked by Household Income

Median Household Income ¹	Percent of Zip Codes with at Least One High-Speed Subscriber				Percent of Population that Resides in Zip Codes with High-Speed Service			
	Jun 2000	Jun 2001	Jun 2002	Jun 2003	Jun 2000	Jun 2001	Jun 2002	Jun 2003
\$53,494 to \$291,938	94.9 %	96.4 %	97.9 %	98.5 %	99.5 %	99.8 %	99.9 %	99.9 %
\$43,617 to \$53,478	85.0	90.7	93.5	96.2	98.1	99.3	99.7	99.8
\$38,396 to \$43,614	74.1	83.8	89.0	94.0	96.4	98.5	99.0	99.6
\$34,744 to \$38,395	68.1	80.0	85.0	91.5	94.8	97.9	98.7	99.3
\$32,122 to \$34,743	64.3	77.3	83.3	90.2	93.5	97.4	98.4	99.2
\$29,893 to \$32,121	61.3	73.4	80.4	89.9	92.2	96.3	97.7	99.1
\$27,542 to \$29,892	58.7	73.5	79.7	89.2	90.5	95.9	97.5	98.9
\$24,855 to \$27,541	56.8	69.6	77.2	87.1	89.8	95.2	97.0	98.5
\$21,645 to \$24,855	53.3	67.4	76.9	87.4	87.5	93.9	96.5	98.5
\$0 to \$21,644	47.9	59.1	69.2	78.3	88.7	94.1	96.3	98.1

¹ Persons per square mile and median household income are in decile groups. Each groups contains 10% of the zip codes.

² The percent of population residing in Zip Codes with more than 3,147 person per square mile and with High-speed Service is 99.7% which rounds to 100%.

Customer Response

Publication: *High-Speed Services for Internet Access: Status as of June 30, 2003.*

You can help us provide the best possible information to the public by completing this form and returning it to the Industry Analysis and Technology Division of the FCC's Wireline Competition Bureau.

1. Please check the category that best describes you:

- press
- current telecommunications carrier
- potential telecommunications carrier
- business customer evaluating vendors/service options
- consultant, law firm, lobbyist
- other business customer
- academic/student
- residential customer
- FCC employee
- other federal government employee
- state or local government employee
- Other (please specify)

2. Please rate the report: Excellent Good Satisfactory Poor No opinion

- | | | | | | |
|----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Data accuracy | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Data presentation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Timeliness of data | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Completeness of data | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Text clarity | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Completeness of text | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

3. Overall, how do you rate this report? Excellent Good Satisfactory Poor No opinion

- | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

4. How can this report be improved?

5. May we contact you to discuss possible improvements?

Name:

Telephone #:

To discuss the information in this report, contact: 202-418-0940 or for users of TTY equipment, call 202-418-0484		
Fax this response to	or	Mail this response to
202-418-0520		FCC/WCB/IATD Mail Stop 1600 F Washington, DC 20554

**STATEMENT OF
CHAIRMAN MICHAEL K. POWELL**

Re: Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, Fourth Notice of Inquiry

Today's action is a re-chartering of our efforts to monitor progress in the advanced services market. Every day American entrepreneurs and innovators roll-out new broadband applications. Those applications can work to stimulate demand for advanced telecommunications capabilities and broadband connections. As these applications evolve, so too should our 706 proceeding.

When we issued our last report under section 706 of the Telecommunications Act, I said that we should strive for more specific data that will allow us to better analyze precisely where operators are deploying broadband services. In this NOI and related data gathering improvement proceedings, we seek comment on how we can improve upon our current zip-code-based approach without swamping innovative new service providers in paperwork. While everyone wants more detailed reports, we should stop short of any measures that would force operators to move dollars from real-world facilities-based investment into dollars for regulatory paperwork. I believe my colleagues and I can work together to strike the right cost-benefit balance. At the very least, asking the right questions now will help us improve our reporting process and, ultimately, improve Americans' access to increasingly important advanced-communications capabilities.

**STATEMENT OF
COMMISSIONER KATHLEEN Q. ABERNATHY**

Re: Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, Fourth Notice of Inquiry

I am pleased that the Commission is initiating this fourth inquiry on the deployment of broadband infrastructure. As I have often stated, this Commission has no higher priority than facilitating the deployment of broadband networks. In the past few years, we have taken important strides in furtherance of this goal. And we are seeing concrete results, as broadband build-out continues at a rapid pace and subscription rates continue their brisk ascent. In the wireline sector, for example, our decision to refrain from mandating the unbundling of broadband loops is helping spur increased investment in fiber networks. Our preservation of a pro-investment framework for cable broadband has been another success story. Our efforts in the wireless arena also have been significant. In particular, our identification of additional spectrum for 3G applications and Wi-Fi, our promotion of flexible uses of spectrum in existing bands, and our development of secondary markets to facilitate spectrum leasing will help deliver broadband services to more Americans. Moreover, our improvements to the satellite licensing process and our efforts to promote nascent technologies such as ultra wideband and broadband over powerline will further this core statutory objective.

This inquiry regarding the timeliness of broadband deployment will help identify whether there are further steps we can take. In particular, we need to assess the extent to which rural areas are benefiting from broadband deployment and what actions would further accelerate investment. I am pleased that we are seeking comment on whether other areas and groups, such as tribal lands and persons with disabilities, are underserved. I also support our focus on ways to improve our data collection so that we can perform a more refined analysis. At the same time, we will need to weigh the benefits of obtaining more granular data against potential regulatory burdens imposed on the entities that file the reports. I look forward to examining the record in this proceeding and working with my colleagues on ways to remove any remaining barriers to broadband deployment.

**STATEMENT OF
COMMISSIONER MICHAEL J. COPPS**

Re: Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, Fourth Notice of Inquiry

I will spare you another iteration of my broadband thoughts because most of you have heard me talk about how I believe broadband is the central infrastructure challenge facing this generation. High capacity networks are to the Twenty-first century what the roads and canals and railroads were to the Nineteenth and highways and telecommunications were to the Twentieth. Our future will be driven by how quickly and how well we build out broadband connectivity to all our people. Our role here needs to be as proactive as possible and I believe Section 706 gives us wide-ranging authority to both study and act on broadband deployment.

People all around the country are waking up to the economic opportunity that broadband availability provides. A few months ago, I spent time in Cleveland with a coalition devoted to reducing the digital opportunity gap for city residents. They are working with schools and local officials in a project known as OneCleveland. Together they are developing a backbone infrastructure to enhance economic opportunity and education in city neighborhoods. They know that access to broadband is critical to the future of their community and the future of the country and they are doing something about it.

I am pleased that we are beginning our next Section 706 inquiry today. I have been advocating this for some time. Good data is a prerequisite for good policy choices. So I hope our questions here will generate the serious and substantive analysis that the subject merits.

I have had problems—methodological and otherwise—with the approach the Commission took in the past with this inquiry. I thought our questions were not sufficiently probing and our conclusions were not supported by the facts. We all applaud the build out of broadband, but being number 11 in the world doesn't indicate to me that our deployment is either reasonable or timely. Other countries are getting a lot more capacity to a lot more people at a lot lower cost than we are. If this isn't a call to action, I don't know what is.

So, for starters, we need to engage stakeholders of all stripes—from community organizations like the ones I met with in Cleveland to carriers large and small; from equipment manufacturers to state and local governments; from entrepreneurs with innovative ideas to experts on the economics of network development. We need to dig deep, beyond cursory zip code data and outdated 200 kilobit standards for advanced service. We have to figure out who is being left behind and why and then articulate a plan to fill in the deployment gaps we identify. This task is not small. But I am optimistic that today's inquiry is a first step in what must be a broad and substantial effort.

I want to thank the Bureau for accommodating some of the concerns I have expressed in the past and for broadening and deepening the inquiry. I look forward to our putting the record to good and productive use to ensure that no American is left behind in the broadband revolution.

**STATEMENT OF
COMMISSIONER JONATHAN S. ADELSTEIN**

Re: Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, Fourth Notice of Inquiry

I am pleased to support this Notice opening an inquiry into the status of broadband deployment. Congress directed this Commission to ensure that all Americans have reasonable and timely access to advanced telecommunications capability, such as broadband services, and this effort is of critical importance to the health of our economy and our quality of life.

Given the universally acknowledged significance of broadband services, I wish that we had started this inquiry sooner. Section 706 directs this Commission to conduct regular inquiries concerning the availability of broadband services. It's been over two years since we completed our last inquiry and the market for broadband service is evolving rapidly and dynamically. Parties may differ about the need for and shape of a national broadband policy, but given the global economy, we must face up to what is happening in the real world.

While we have delayed our own report card, there are warning signs being raised from other sources. The U.S. was recently ranked 11th worldwide in broadband penetration in a report by the International Telecommunications Union. I am glad that this Notice explores what lessons we can learn from those nations that may be deploying broadband more quickly.

This Notice also asks fundamental questions about broadband deployment to consumers in rural areas, persons with disabilities, and Native Americans. The record we develop in this proceeding should improve our understanding of the challenges of providing broadband to these consumers, and on the unique opportunities that broadband services can bring.

As the first person from South Dakota to serve as a Commissioner at the FCC, I know firsthand how important broadband services are to rural communities. Ensuring access to hard-to-serve areas of America is vital to their economic viability. Broadband gives businesses in these areas the tools they need to compete across the globe. By giving rural consumers access to telemedicine and distance learning, not to mention the vast array and ever growing resources available through the Internet, we give rural residents and their children the same opportunities that others enjoy. There are many success stories in providing broadband to these consumers, and I encourage commenters to help us understand the secrets to their success.

I am also pleased that this item asks questions about our definition of "advanced telecommunications capability." In past reports, we have considered services that deliver transmission speeds of at 200 kbps as broadband, a definition we adopted in 1999. Five years later, it appears that many of the most promising applications require considerably greater capacity. It is important that we look closely at the capabilities that are currently available to consumers. We also acknowledge in this Notice our intention to revise our formal broadband data gathering program, but concede that we have not started this effort in time for us to use any more comprehensive data collected for this report. In the past, the Commission has

acknowledged limitations to its data collection effort, and I wish that we had addressed those issues in time for us to benefit from more granular and detailed data.

Finally, I believe that federal policies, such as universal service or video relay service, can play a vital role by increasing access to and encouraging demand for broadband services. Many of these programs are at issue in other proceedings before this Commission, so I encourage commenters to discuss the role of these programs in promoting the availability and use of broadband.