

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) CC Docket No. 98-146
and Timely Fashion, and Possible Steps)
to Accelerate Such Deployment)
Pursuant to Section 706 of the)
Telecommunications Act of 1996)

THIRD NOTICE OF INQUIRY

Adopted: August 9, 2001

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Comment Date: 30 days from publication in the Federal Register.
Reply Comment Date: 45 days from publication in the Federal Register.

By the Commission: Commissioner Martin issuing a statement.

I. INTRODUCTION

1. This Notice of Inquiry (Notice) begins our third inquiry under section 706 of the Telecommunications Act of 1996 into "whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion."¹ To help inform this inquiry, we are simultaneously releasing our most recent data on subscribership to high-speed services.² Our first and second inquiries concluded that the deployment of advanced telecommunications capability was reasonable and timely on a general, nationwide basis.³ Our Second Report cautioned, however, that certain groups of consumers might be particularly vulnerable to not receiving timely deployment of advanced telecommunications capability by

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 *High-Speed Services for Internet Access: Subscribership as of December 31, 2000* (Ind. Anal. Div. rel. Aug. 10, 2001) (December 2000 Statistical Summary), available and at <http://www.fcc.gov/Bureaus/CommonCarrier/Reports/FCC-StateLink/comp.html>.

³ *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 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*).

market forces alone.⁴ Notwithstanding our conclusion that deployment is occurring in a reasonable and timely basis, we continue to take steps to remove any barriers to deployment; to remove any barriers to investment in technologies that can deliver advanced services; and to vigorously promote a competitive marketplace. In this inquiry, we re-examine the marketplace in order to determine whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely manner.⁵ This inquiry will build on the information we have collected through our previous inquiries, our continuing dialogue with the Joint Federal-State Conference on Advanced Services (Joint Conference),⁶ the Joint Conference's database of community deployment efforts, and the records developed in our proceedings designed to increase competition and promote deployment.

II. BACKGROUND

2. Advanced services are provided using a variety of public and private networks that rely on different network architectures and transmission paths. Some of these networks, like the Internet, are public in the sense that access to the network is open to all users. Other networks, like those built and maintained by corporations for their internal use, are private in the sense that access to the network may be restricted to a particular class of users, often the corporation's employees. Moreover, depending on the network, data may travel from the sender to the recipient over various architectures and transmission paths such as copper wire, cable, terrestrial wireless networks, satellite, or a combination of these and other media. In addition, data may be transmitted using different communications protocols that manage and direct traffic at different layers of a particular network.⁷

3. Although advanced services are provided over myriad combinations of public and private networks using a variety of transmission paths and protocols, for the purposes of our reports on the deployment of advanced telecommunications capability we focus on the physical components of the network infrastructure. For simplicity, we have divided network infrastructure into four general categories: *backbone*, *middle mile*, *last mile*, and *last 100 feet*. In addition, we refer to the points of connection between these components of the network as *connection points*. These network components are useful for organizing our analysis; however

⁴ These particularly vulnerable consumers included low-income consumers, consumers living in sparsely populated areas, consumers living in inner cities, minority consumers, consumers living on tribal lands, consumers living in the U.S. territories, persons with disabilities, elementary and secondary schools (especially instructional classrooms), and rural health care facilities. *Second Report*, 15 FCC Rcd at 20996-03.

⁵ See § 706(b) of the 1996 Act.

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. The field hearings focus on two goals: (1) the deployment of advanced services at the state level; and (2) examples of "best practices" in successful deployment communities.

⁷ For instance, the Internet Protocol (Transmission Control Protocol/Internet Protocol suite) supports interconnections across any physical transport medium, including wireline, terrestrial wireless and satellite, at various rates, and can support various applications. Other transmission protocols such as asynchronous transfer mode (ATM) or frame relay exist within other networks capable of supporting advanced telecommunications capabilities.

⁹ *First Report*, 14 FCC Rcd at 2406-09; *Second Report*, 15 FCC Rcd at 20920-21.

we recognize that because of the wide variety of network architectures and transmission media that deliver advanced telecommunications capabilities, some of these categories may overlap or be absent in a specific situation.

4. *Backbone* facilities provide a long-distance, high-capacity, high-speed transmission path for transporting massive quantities of data. Most backbone consists of fiber optic lines, either buried in the ground or laid under the sea. In addition, backbone can be provided using satellite systems and radio spectrum. As its name suggests, *middle mile* facilities provide relatively fast, large-capacity connections between backbone and last mile. Middle mile facilities can range from a few miles to a few hundred miles. They are often constructed of fiber optic lines, but microwave and satellite links can be used as well. The *last mile* is the link between the middle mile and the last 100 feet to the end-user's terminal. Last miles with advanced telecommunications capability may consist of cable modem facilities, digital subscriber line (DSL) facilities, terrestrial wireless facilities, or satellite facilities. Some last-mile segments -- for example those on certain cable systems -- provide faster downstream speeds than upstream speeds either because their network configurations will not support the higher upstream speed or because they rely on a telephone return path. The *last 100 feet* is the link between the last mile and the end-user's terminal. The last 100 feet includes the in-house wiring found in a consumer's residence, the wiring in an apartment or office building, the more complex wiring in a wireline local area network, or the wireless links in a local wireless network. *Connection points* are the places at which the various components of the network interconnect, often with the aid of an electronic or optical device (e.g., switches and routers between the middle mile and backbone), so that data can move across the network.

III. WHAT IS "ADVANCED TELECOMMUNICATIONS CAPABILITY"?

5. We propose to keep the definitions that we used in our First and Second Reports. Chief among these is our definition of "advanced telecommunications capability" and "advanced services" as having the capability of supporting, in both the provider-to-customer (downstream) and the customer-to-provider (upstream) directions, a bandwidth in excess of 200 kilobits per second (kbps) in the last mile; and to define as "high-speed" those services with over 200 kbps capability in at least one direction.⁹ Thus, we propose to continue to examine both the relatively narrow class of "advanced" services that is the focus of section 706 and the broader class of "high-speed" services, which include advanced services.

6. We also propose to continue to use several important descriptive terms from our First and Second Reports, namely our descriptions of: (1) backbone facilities, middle mile facilities, last mile facilities, last 100 feet facilities, connection points, residential and small business customers, and large business and institutional customers (collectively referred to as "business customers");¹⁰ (2) the various forms of high-speed service (cable modem service, digital subscriber line (DSL, especially asymmetric DSL or ADSL), other Local Exchange Carrier (LEC)-provided wireline services (most notably optical fiber), fixed wireless service, and satellite service); and (3) the terms high income, low income, and small town.¹¹ We welcome

¹⁰ Because small business customers share significant characteristics with residential customers, in the First and Second Reports, we combined small business and residential customers. See *First Report*, 14 FCC Rcd at 2446; *Second Report*, 15 FCC Rcd at 20941. We propose to do the same here.

¹¹ *First Report*, 14 FCC Rcd at 2409; *Second Report*, 15 FCC Rcd at 20923-39, 20941, 20951 nn. 121-22.

comment on these proposals.

7. We propose to keep all these definitions for the reasons we adopted them in our Second Report. Also, our Second Report described the several “last mile” technologies of high-speed systems in great detail.¹² We are unaware of significant changes in the technology and networks for high-speed services that make our previous descriptions outmoded, at least for the purposes of this inquiry. We welcome comments and suggested improvements, however.

IV. IS ADVANCED TELECOMMUNICATIONS CAPABILITY BEING DEPLOYED TO ALL AMERICANS?

8. Early in 2000, we adopted our Form 477 and began gathering data about deployment of, and subscription to, high-speed and advanced services.¹³ The Form 477 is filed with us by facilities-based providers who have more than 250 high-speed service lines or wireless channels in service in a state.¹⁴ For each such state, a provider files a Form 477. Each filer provides data on the number of lines or wireless channels by technology (service provided on coaxial cables, on wireline telephone lines, *etc.*) and by zip code. These standardized data enable us to track deployment by different kinds of providers and technologies as well as the growth in subscribership overtime.

9. By measuring subscribership, we seek a verifiable count of how much high-speed service is being delivered and purchased in the marketplace. Subscribership necessarily reflects a combination of factors including availability of infrastructure, service offerings tailored to customers’ needs, and affordable pricing. We believe that this is a vital benchmark in assessing the state of high-speed deployment. By comparing levels of subscribership over time, we are able to determine the pace at which advanced telecommunications capabilities are being deployed in different parts of the country and across different demographic groups.

10. In order to minimize the burden associated with our Form 477, the Commission did not require providers to report the number of high-speed service subscribers in each zip code, but only to report levels of subscribership by technology in states in which they had more than 250 high-speed service lines and to identify the zip codes in which they had at least one high-speed service subscriber.¹⁵ This decision reflects the Commission’s understanding that a data collection that required detailed reporting at finer geographic levels would have created an

¹² *Id.* at 20928-38.

¹³ *Local Competition and Broadband Reporting*, CC Docket No. 99-301, Report and Order, 15 FCC Rcd 7717 (2000) (*Data Gathering Order*).

¹⁴ We have encouraged facilities-based providers that fall below the threshold in a given state to submit the Form 477 on a voluntary basis and many do. *See Second Report*, 15 FCC Rcd at 20940-41. We received 84 state-specific voluntary submissions (made by 41 holding companies) in the first Form 477 filing, 78 voluntary submissions (made by 33 holding companies) in the second filing, and 64 voluntary submissions (made by 41 holding companies) in the third filing.

¹⁵ As a result, we cannot determine from our data the extent to which the presence of high-speed service 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.

appreciable regulatory burden for the firms providing high-speed service.¹⁶ By analyzing the zip codes where there are actual high-speed subscribers, we can gain useful insight into the deployment and location of high-speed-capable infrastructure.¹⁷ The zip code data depict where actual high-speed subscribers are located and, more precisely, show areas where at least one customer receives high-speed services in the last mile to the customer premises. We believe these data can help us identify issues for further exploration. For instance, zip codes in which there are no reported subscribers may not have last mile facilities. Consumers in those zip codes would then be differently situated, and require different solutions to bring them access than consumers in zip codes where last mile infrastructure exists but other barriers prevent them from accessing it.

11. We now have three sets of data about the deployment of, and subscribership to, high-speed and advanced services, as of December 31, 1999, June 30, 2000, and December 31, 2000. These data are published in periodic statistical summaries produced by the Industry Analysis Division of our Common Carrier Bureau.¹⁸ In response to requests from carriers submitting the Form 477, the Commission has presented the data in a manner that does not reveal individual company data.¹⁹ Specifically, the Commission uses statistical methods, such as suppression and aggregation, to ensure that individual company-filed broadband data obtained through the Form 477 will not be revealed through the use of released information. The most recently filed data are being released simultaneously with this Notice.²⁰ We present some analysis of our data here, and request comment on that analysis.

12. The data reported on the Form 477, for example, show a substantial increase in residential and small business advanced service lines.²¹ Figure 1 shows that, as of December 31, 1999, there were approximately 1.8 million residential and small business high-speed lines in service, of which approximately 1.0 million were for advanced service.²² As of June 30, 2000,

¹⁶ We recently sought comment on how to refine or improve data gathering on broadband deployment. *See Local Competition and Broadband Reporting*, CC Docket No. 99-301, Second Notice of Proposed Rulemaking, FCC 01-19 (rel. Jan. 19, 2001), available at 2001 WL 46680 (FCC).

¹⁷ This focus on actual subscribership to high-speed service offerings, as opposed to future or present high-speed capability, reflects a combination of factors that result in any given customer being able to subscribe to high-speed services. These factors include: availability of infrastructure; service offerings that are tailored to that consumer's needs; and affordable pricing.

¹⁸ *See, e.g., High-Speed Services for Internet Access: Subscribership as of June 31, 2000* (Ind. Anal. Div. rel. Oct. 31, 2000) (June 2000 Statistical Summary), available at <http://www.fcc.gov/Bureaus/CommonCarrier/Reports/FCC-StateLink/comp.html>.

¹⁹ *See Data Gathering Order*, 15 FCC Rcd at 7760.

²⁰ *High-Speed Services for Internet Access: Subscribership as of December 31, 2000* (Ind. Anal. Div. rel. Aug. 10, 2001) (December 2000 Statistical Summary), available and at <http://www.fcc.gov/Bureaus/CommonCarrier/Reports/FCC-StateLink/comp.html>.

²¹ For purposes of submitting 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.

²² December 2000 Statistical Summary, Table 3. The number of high-speed service customers are estimates supplied by filing companies. The number of advanced service customers are estimates by Commission Staff based on the methodology described in footnote 102 of the Second Report. *Second Report*, 15 FCC Rcd at 20943 n. 102.

(continued...)

those numbers were approximately 3.2 million and 1.7 million, respectively, and as of December 31, 2000, they were 5.2 million and 2.8 million, respectively.²³ As Figure 2 illustrates, these numbers indicate a residential and small business penetration of 1.6% for high-speed services and 1.0% for advanced services at the end of 1999; of 2.9% and 1.6%, respectively, on June 30, 2000; and of 4.7% and 2.6%, respectively, on December 31, 2000.²⁴

13. At all times, subscribers to high-speed services were present in all fifty states, the District of Columbia, and Puerto Rico. In the last half of 2000, the first high-speed subscribers were reported in the Virgin Islands.²⁵ As of December 31, 1999, there was at least one subscriber to high-speed services in 56% of the country's zip codes, and 91% percent of the country's population lives in those zip codes.²⁶ By December 31, 2000, 75% of the country's zip codes had subscribers reported and 96% of the population lived in those zip codes.²⁷ Figure 3 illustrates this trend.

14. As illustrated in Figures 4 and 5, the three sets of data also show that subscription to high-speed services varies among different areas and customers. For example, on December 31, 1999, 96% of the most densely populated zip codes had at least one high-speed subscriber, but only 19% of the most sparsely populated zip codes had one.²⁸ By June 30, 2000, 98% of the most densely populated zip codes had at least one high-speed subscriber, and 35% of the most sparsely populated zip codes had one.²⁹ By December 31, 2000, 98% of the most densely populated zip codes had at least one high-speed subscriber, and 37% of the most sparsely populated zip codes had one.³⁰ On December 31, 1999, 91% of the highest income zip codes had at least one high-speed subscriber, but just 42% of the lowest income zip codes had one.³¹ The comparable data for June 30, 2000, are 95% and 51%,³² and for December 31, 2000, are 96%

(...continued from previous page)

Both estimates are of the number of lines, each of which we assume for present purposes represents a different residential customer.

²³ December 2000 Statistical Summary, Table 3.

²⁴ See *Second Report*, 15 FCC Rcd at 20942; December 2000 Statistical Summary, Table 3. As of July 2000, there were about 106 million households in the United States. FCC Industry Analysis Division, TRENDS IN TELEPHONE SERVICE, Table 17.1 (Dec. 2000). At all pertinent times, there have been about 4 million small businesses (establishments with 1-4 employees) in the U.S. U.S. Census Bureau, STATISTICAL ABSTRACT OF THE UNITED STATES 559, No. 881 (1999) & 547, No. 872 (2000).

²⁵ December 2000 Statistical Summary at 1.

²⁶ *Second Report*, 15 FCC Rcd at 20946.

²⁷ December 2000 Statistical Summary at 4.

²⁸ *Id.*, Table 10. Data stated in the text above are for the top and bottom, respectively, one tenth of zip codes ranked by population density.

²⁹ June 2000 Statistical Summary, Table 8.

³⁰ December 2000 Statistical Summary, Table 10.

³¹ *Id.*, Table 11. Data stated in the text above are for the top and bottom, respectively, one tenth of zip codes ranked by median family income.

³² June 2000 Statistical Summary, Table 9.

and 56%.³³

15. As of December 31, 1999, there was at least one subscriber to high-speed services in 57% of zip codes in small towns.³⁴ This subscribership level had increased to 75% by June 30, 2000, and 79% by December 31, 2000. Increases also were seen in tribal lands. As of December 31, 1999, there was at least one subscriber to high-speed services in 44% of zip codes that contained tribal lands.³⁵ The comparable percent on June 30, 2000, was 65% and on December 31, 2000, was 67%.³⁶

16. Our information also reveals growth in subscription to the technologies used to provide high-speed services to residential and small business customers. The leading technology, cable modem service, grew from 1.4 million residential and small business lines nationwide as of December 31, 1999, to 2.2 million on June 30, 2000, and 3.3 million on December 31, 2000.³⁷ This shows growth of 48% from June to December 2000 and of 134% for the full year. ADSL has fewer total subscribers, but the number of ADSL subscribers is growing faster than the number of cable subscribers. ADSL had 300,000 residential and small business lines nationwide as of December 31, 1999; 800,000 subscribers on June 30, 2000, and 1.6 million on December 31, 2000.³⁸ This shows growth of 107% from June to December 2000 and of 447% for the full year. Growth in cable modem and ADSL deployment to residential and small business customers is illustrated in Figure 6. Data on other new technologies indicate similar growth.³⁹

17. The data indicate that many consumers in zip codes with access to high-speed services increasingly have a choice of service providers. For example, our December 31, 1999, data showed that there were two or more providers in 32% of the nation's zip codes. Our June 30, 2000, data showed two or more providers in 44% of the nation's zip codes, and our December 31, 2000, data showed two or more providers in 51% of the nation's zip codes.⁴⁰ The December 31, 2000, data are displayed in a map of the United States that appears in our latest High-Speed Statistical Summary.⁴¹

³³ December 2000 Statistical Report, Table 11.

³⁴ *Second Report*, 15 FCC Rcd at 20951. We consider a "small town" to be a locale that meets the following criteria: 1) between 1,000 and 15,000 in population; 2) between the 25th percentile and 75th percentile in population density; 3) no adjacent zip codes with more than 10,000 population; and 4) adjacent zip codes have no more than 80% of the population density of the small town's zip code. Our zip code data does not distinguish among communities within a zip code.

³⁵ *Id.*

³⁶ More such data are available in Appendix B to the Second Report and on the Commission's web page at http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/comp.html.

³⁷ December 2000 Statistical Summary, Table 3. All the customer numbers in the paragraph in the text above are approximate.

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ *Id.*, Table 8.

⁴¹ *Id.*

18. The data described in the previous paragraphs, as well as the newer set of such data as of June 30, 2001, which we expect to receive in the coming months, will be an important foundation of our Third Report. We welcome additional data, however, that will enable us to make informed judgments about whether the deployment of advanced services is reasonable and timely. 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, deployment and subscription for different technologies, companies, areas, and types of consumers, and the presence of consumer choice for competing technologies and companies.⁴² We also seek comment on whether there are other ways of analyzing our data. In addition, we seek comment on whether our current data collection overlooks certain underserved areas or customer classifications, or growth in areas we have not identified.

V. IS DEPLOYMENT REASONABLE AND TIMELY?

19. Once we have gathered data 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.” In determining whether deployment is reasonable and timely, we have examined various aspects of the deployment of, and market for, advanced services. We propose to use the same evaluative criteria we used in our Second Report.⁴³ First, we will examine subscription to high-speed services, focusing both on how it has changed over the last year and how it is projected to change in the future. In this Notice, we request any data on service availability and subscription that can supplement our Form 477 data and further our understanding. Second, we will examine investment in the infrastructure to support advanced services. Third, we will review trends in the alternatives available to consumers of advanced services. This includes both assessing the number of providers offering service through a particular technology and the different technological options that consumers have for obtaining advanced services. We may also compare the present state of these indicia, their levels in the recent past, and projections of their future levels. We request comment on the continued usefulness of these criteria and we welcome suggestions of additional or alternative criteria. We also generally seek comment on whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.

20. Subscription. We have analyzed the data as described above. The data show continued and rapid growth of subscription to high-speed and advanced services on a nationwide basis. Our data indicate that, as of December 2000, 4.7% of the country’s residences and small businesses subscribe to high-speed services and 2.6% of the country’s residences and small businesses subscribe to advanced services. The data also show continued rapid growth by all technologies, with ADSL gaining significantly on cable’s lead.

21. We request additional data on the categories of consumers for which we do not have specific data on access to advanced services. Specifically, we seek additional data on access to

⁴² Our Second Report contained lengthy “Case Histories” showing the success of deployment in several communities. *Second Report*, 15 FCC Rcd at 20961-79. We do not intend our Third Report to recreate or update them, but we welcome any additional case histories that parties wish to describe to us.

⁴³ *Second Report*, 15 FCC Rcd at 20991.

advanced services by elementary and secondary schools, persons with disabilities, and rural health care facilities. For example, we have data on access to the Internet by elementary and secondary public schools, but the data does not identify the speed of services that connect classrooms.⁴⁴ In 1994, only 3% of instructional rooms in public schools had Internet access. By the fall of 2000, 77% of instructional rooms in public schools had Internet access.⁴⁵ A smaller percentage of instructional rooms were connected to the Internet in schools with the highest concentration of students in poverty and the highest levels of minority enrollment (60% and 64%, respectively).⁴⁶ The same trends appear when looking at the ratio of students to instructional computers with Internet access. The ratio was greater in schools with the highest concentration of students in poverty and the highest levels of minority enrollment (9 to 1 and 8 to 1, respectively, compared to the national figure of 7 to 1).⁴⁷ Does the same relationship exist when looking at the speed of the connections? In addition, we have data on computer ownership and Internet use by persons with disabilities,⁴⁸ but do not specifically have data on access to advanced services by such consumers. As of March 1999, 23.9% of persons with disabilities had access to a computer at home and 9.9% of persons with disabilities connected to the Internet.⁴⁹ Persons with disabilities were less than half as likely as their non-disabled counterparts to have access to a computer at home and almost three times as many persons without disabilities had the ability to connect to the Internet at home as those with disabilities.⁵⁰ These differences were even more pronounced when comparing elderly, unemployed, low-income, or minority persons with disabilities to persons without disabilities.⁵¹ We request additional data on advanced services deployment for such categories of consumers.

22. We also seek comment on the status of deployment of high-speed and advanced services to low-income consumers, consumers living in sparsely populated areas and in inner cities, minority consumers, consumers living on tribal lands, and consumers living in the U.S. territories. The Form 477 data show significant shrinkage in the gap between subscription to advanced services in densely and sparsely populated zip codes, in high-income and low-income zip codes, and between small towns and tribal territories on the one hand and the nation as a whole on the other. For example, on December 31, 1999, the gap between subscription to high-speed services in the most densely populated zip codes and in the most sparsely populated ones was 77 percentage points. Figure 4 shows that, by December 31, 2000, the gap had shrunk to 61 percentage points, largely due to increased subscribership in the least populated zip codes. On December 31, 1999, the gap between the highest income zip codes and the lowest income ones was 49 percentage points. As illustrated in Figure 5, by December 31, 2000, the gap had shrunk

⁴⁴ Cattagni, A. & Farris, E., *Internet Access in U.S. Public Schools and Classrooms: 1994-2000*, United States Department of Education, Office of Educational Research and Improvement, at 3 (May 2001).

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ See Kaye, H.S., *Computer and Internet Use Among People with Disabilities*, United States Department of Education, National Institute on Disability and Rehabilitation Research (Mar. 2000).

⁴⁹ See *id.* at 5, Table A.

⁵⁰ *Id.*

⁵¹ See *id.* at 5-14.

to 40 percentage points primarily due to increases in the number of low-income zip codes with subscribers. On December 31, 1999, the gap between subscribership to high speed services in zip codes nationwide and subscription to high-speed services in zip codes that contain tribal territories was 12 percentage points. By December 31, 2000, the gap had shrunk to 8 percentage points.

23. Investment. In the Second Report, we observed that large amounts of investment capital, even by the standards of the communications industry, have poured into the development of infrastructure for advanced services.⁵² We note, however, reports indicating that the pace of investment in the deployment of advanced services may have slowed in recent months.⁵³ Moreover, several providers of advanced services recently have filed for bankruptcy protection.⁵⁴ We, therefore, seek comment on whether earlier positive investment trends are continuing and, if so, whether such investment trends reflect increased demand for high-speed and advanced services. If investment is slowing, we seek comment on whether providers of high-speed and advanced services have access to sufficient levels of capital to satisfy current and future demand for such services and whether additional steps should be taken to accelerate deployment. We specifically seek comment on whether recent financial difficulties faced by certain providers reflect decreased demand for high-speed and advanced services. We also seek comment on whether customers of financially distressed providers still have access to high-speed and advanced services.

24. Technological and Industry Trends. In the Second Report, we looked closely at the various technologies currently capable of providing advanced services as well as those technologies that are likely to emerge in the near future. We determined that competition among providers within certain technologies is emerging and that there is potential for several different technological options for providing advanced services. We seek comment as to any developments in this area. Are there technologies that are not discussed in the Second Report that are now being used to provide high-speed or advanced services, or likely to be used in the near future? Are these technological developments likely to be particularly beneficial to one group of customers, such as rural customers or customers with disabilities? Have there been any other changes in the industry that affect our conclusion in the Second Report?

VI. WHAT ACTIONS CAN ACCELERATE DEPLOYMENT?

25. Pursuant to the Act, “the Commission...shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans...by

⁵² See *id.* at 20991-92.

⁵³ See, e.g., Dori Jones Yang, *Overwired World: Telecom’s Crash for Investors, Consumers, More Trouble Ahead*, U.S. NEWS & WORLD REPORT (Jun. 25, 2001), available at 2001 WL 6320623; Steven Rosenbush, *Broadband: What Happened?*, BUSINESS WEEK (Jun. 11, 2001), available at 2001 WL 2207456; David Olive, *Telecom Sector Still Sinking, What a Difference a Year Makes*, FINANCIAL POST (Jun. 9, 2001), available at 2001 WL 22273103.

⁵⁴ See *id.*

⁵⁷ *Id.* See § 706(a) of the 1996 Act.

utilizing...price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment.”⁵⁷ If we find that advanced telecommunications capability is not being deployed in a reasonable and timely manner, we must “take immediate action to accelerate deployment of such capability by removing barriers to infrastructure investment and promoting competition in the telecommunications market.”⁵⁸ Our First and Second Reports described several examples of these and other activities that we, other governmental entities, private groups and individuals have undertaken to speed the deployment of advanced services. These included our Joint Conference; anchor tenants⁵⁹ and demand aggregation,⁶⁰ the E-rate program; entry- and competition-welcoming laws, strategic planning and investment by state and local governments; and activism among local businesses and consumer groups.⁶¹

26. We seek comment on how we or state commissions should encourage deployment of advanced telecommunications services generally by utilizing price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulatory methods that remove barriers to infrastructure investment.⁶² We also seek comment on how we, in those instances where deployment is not reasonable and timely, should accelerate deployment of advanced telecommunications services by removing barriers to infrastructure investment and promoting competition in the telecommunications market. We seek empirical evidence regarding what has caused the increase in subscribership in rural, low-income, and tribal communities reflected in our data.⁶³ Can these trends be replicated in other areas? Are there groups of Americans for whom the pace of deployment justifies particular actions under section 706? If so, what would those specific actions entail, and what would the costs and benefits of those actions be?

VII. PROCEDURAL MATTERS

27. Pursuant to sections 1.415, 1.419, and 1.430 of the Commission's rules, 47 C.F.R. § 1.415, 1.419, 1.430, interested parties may file comments 30 days from publication in the Federal Register, and reply comments 45 days from publication in the Federal Register. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS) or by filing paper copies. See Electronic Filing of Documents in Rulemaking Proceedings, 63 Fed. Reg. 24,121 (1998).

28. Comments filed through the ECFS can be sent as an electronic file via the Internet to

⁵⁸ See § 706(b) of the 1996 Act.

⁵⁹ An anchor tenant is a public entity or other large customer that uses its demand to attract investment in infrastructure with advanced telecommunications capability. The large customer acts as an anchor for the investment. The infrastructure, which is used to provide service to this large customer, can then be used by other business or residential customers, or it can be the springboard for additional facilities.

⁶⁰ Demand aggregation is the practice of aggregating customer demand for advanced services when seeking a provider. Through this method, groups of customers can substantially reduce providers' customer acquisition costs, demonstrate demand sufficient to warrant infrastructure investment, and use facilities efficiently.

⁶¹ *First Report*, 14 FCC Rcd at 2452-53; *Second Report*, 15 FCC Rcd at 21004-13.

⁶² See § 706(b) of the 1996 Act.

⁶³ See *supra* discussion at paras. 11-12.

<<http://www.fcc.gov/e-file/ecfs.html>>. Generally, only one copy of an electronic submission must be filed. If multiple docket or rulemaking numbers appear in the caption of this proceeding, however, commenters must transmit one electronic copy of the comments to each docket or rulemaking number referenced in the caption. In completing the transmittal screen, commenters should include their full name, Postal Service mailing address, and the applicable docket or rulemaking number. Parties may also submit an electronic comment by Internet e-mail. To get 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.

29. Parties who choose to file by paper must file an original and four copies of each filing. If more than one docket or rulemaking number appear in the caption of this proceeding, commenters must submit two additional copies for each additional docket or rulemaking number. All filings must be sent to the Commission's Secretary, Magalie Roman Salas, Office of the Secretary, Federal Communications Commission, 445 12th St., S.W., Room TW B-204, Washington, D.C. 20554. Filings will be available for public inspection and copying during normal business hours in the FCC Reference Information Center, 445 12th Street, S.W., Suite CY-A257, Washington, D.C. 20554.

30. 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.

31. 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.

32. For additional information regarding this proceeding, contact Ellen Blackler, Special Assistant to the Bureau Chief, Common Carrier Bureau, at 202-418-0491 voice, 202-418-0484 TTY, or eblackle@fcc.gov. It would be appreciated if parties filing comments or reply comments would deliver to Ellen Blackler, Room 5-C413, 445 12th Street, S.W., Washington, D.C. 20554, two hard copies and one diskette copy in Word, suitable for word-searching.

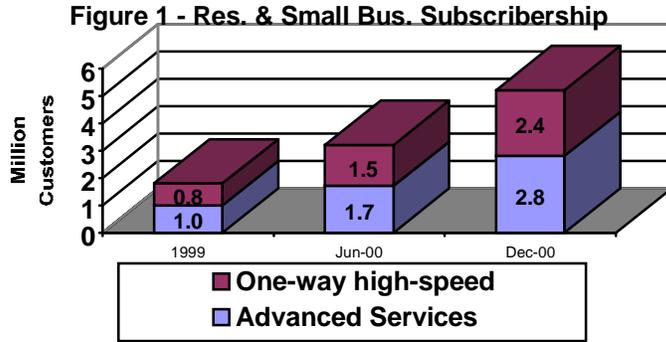
33. Alternate formats (computer diskette, large print, audio recording, and Braille) are available to persons with disabilities by contacting Brian Millin at (202) 418-7426 voice, (202) 418-2555 TTY, or at bmillin@fcc.gov. This Notice can also be downloaded in MSWord97 and in ASCII formats at: [http:// www.fcc.gov/df](http://www.fcc.gov/df).

VIII. ORDERING CLAUSES

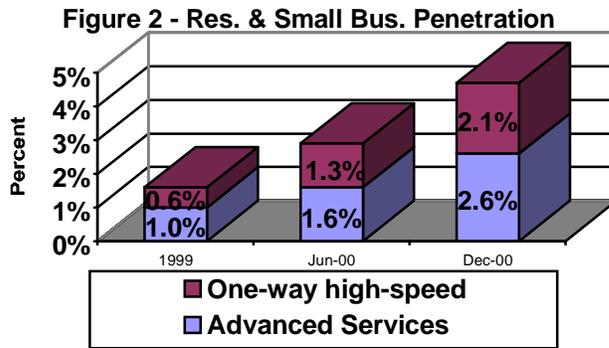
34. Accordingly, IT IS ORDERED that, pursuant to section 706 of the Telecommunications Act of 1996, this Notice of Inquiry IS ADOPTED.

FEDERAL COMMUNICATIONS COMMISSION

Magalie Roman Salas
Secretary

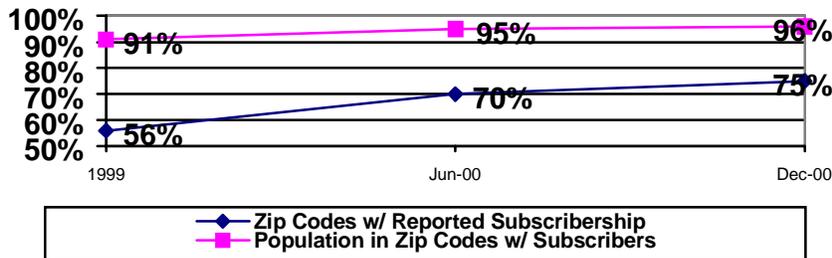


Sources: Second Report at para. 69; June 2000 Statistical Summary; December 2000 Statistical Summary.

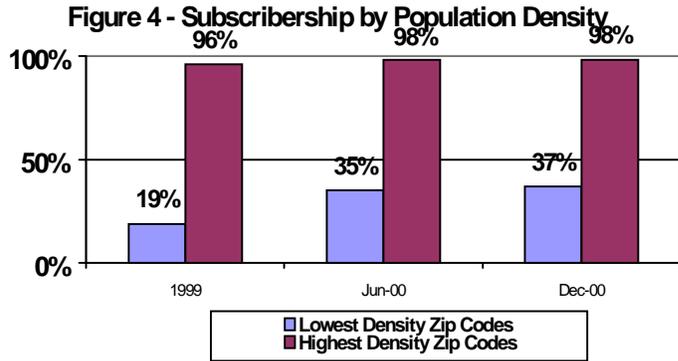


Sources: Second Report at para. 70; June 2000 Statistical Summary; December 2000 Statistical Summary.

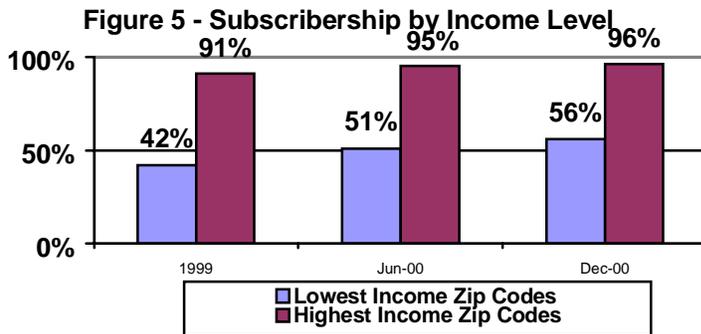
Figure 3 - Subscribership by Zip Code and Population



Sources: Second Report at paras. 83-84; June 2000 Statistical Summary; December 2000 Statistical Summary.

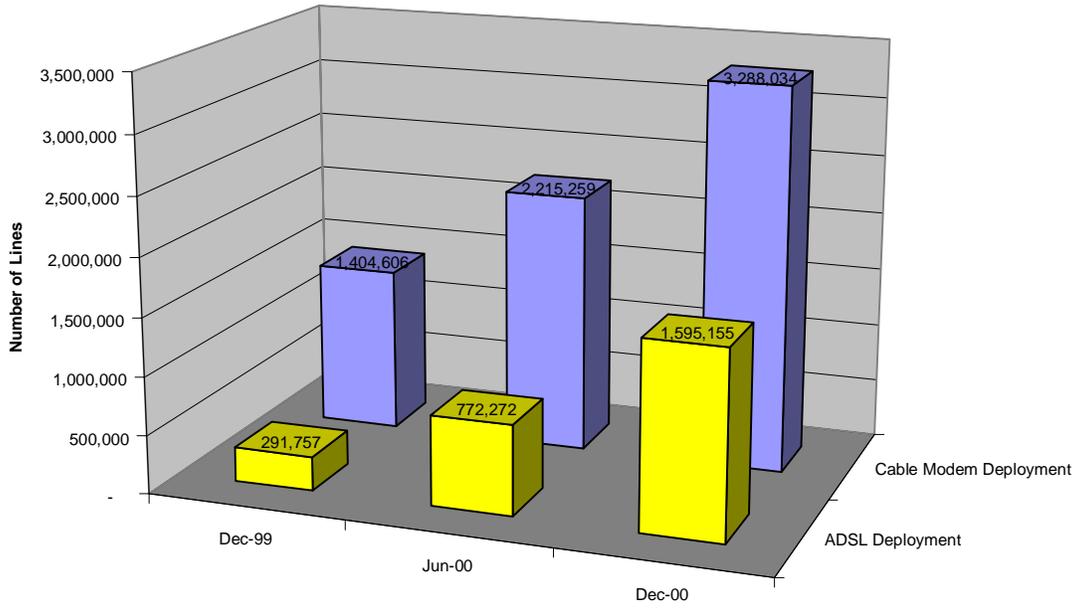


Sources: Second Report at para. 88; June 2000 Statistical Summary; December 2000 Statistical Summary.



Sources: Second Report at para. 90; June 2000 Statistical Summary; December 2000 Statistical Summary.

Figure 6 - Residential and Small Business High-Speed Lines



**SEPARATE STATEMENT OF
COMMISSIONER KEVIN J. MARTIN**

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, Third Notice of Inquiry, CC Docket No. 98-146

Today, the Commission commences its third inquiry under section 706 of the Telecommunications Act of 1996, which directs the Commission to encourage the deployment of advanced telecommunications capability to “all Americans,” to determine whether such capability is being deployed in a reasonable and timely fashion, and, if not, to take immediate action to accelerate deployment. In enacting this provision, Congress made clear that deployment of advanced services is critically important to our nation.

I write separately in strong support of today’s item. Encouraging deployment of advanced services should be a priority of the Commission, and I am pleased that this is one of the first items to come before me as a Commissioner. Such deployment is essential to our nation’s growth in the 21st century, as it dramatically reduces the cost of exchanging information, enables “local” businesses to provide services to the entire world, and provides numerous and innovative services to consumers.

Advanced services are particularly important to rural communities. High speed data connections enable people in remote parts of the country to have access to the educational materials of large universities, the healthcare resources of our best hospitals, and business opportunities all over the world. Thus, I am happy to learn that, although rural communities still lag behind urban communities, these gaps are closing. We must ensure that this growth in access continues and fulfill Congress’ mandate to encourage deployment of advanced services to “all Americans.”

I am anxious to hear from a range of voices in this proceeding on how the Commission can further promote deployment of advanced services. This will be one of my central priorities as a Commissioner, and I am pleased to begin my tenure with this inquiry.