

Declaration of Richard J. Gilbert

I, Richard J. Gilbert, hereby declare the following:

I. Qualifications

1. My name is Richard J. Gilbert. I am Professor of Economics and Chair of the Department of Economics at the University of California at Berkeley. I am also a Director of LECG, LLC, a firm providing expert analysis and management consulting in economics, accounting, and finance.
2. I received Bachelor and Master of Science degrees in Electrical Engineering from Cornell University in 1966 and 1967, respectively. I received a Master of Arts Degree in Economics from Stanford University in 1975, and a Doctor of Philosophy in Engineering-Economic Systems from Stanford University in 1976.
3. I teach and pursue research in industrial organization and regulation. Industrial organization is the academic field that deals with policy issues related to the structure and performance of firms in an industry, with particular attention to competition and antitrust policy. I have been an associate editor of *The Journal of Economic Theory*, *The Journal of Industrial Economics*, and *The Review of Industrial Organization*. From 1994 to 1995, I was President of the Industrial Organization Society. From 1994 to 1996, I was vice-chair of the American Bar Association Section of Antitrust Law's Economics Committee. I have lectured widely on industrial organization theory and policy, and I have testified before U.S. courts of law, regulatory commissions, and Congress on economic policy issues. My curriculum vitae is attached to this declaration.
4. From 1993 until 1995, I was the Deputy Assistant Attorney General for Economics in the Antitrust Division of the U.S. Department of Justice ("Antitrust Division"), the highest-ranking economics position in the Antitrust Division. While at the Antitrust Division, I oversaw the drafting of the Antitrust Guidelines for the Licensing of

Intellectual Property (the “Intellectual Property Guidelines”).¹ The Intellectual Property Guidelines were adopted by both the U.S. Department of Justice and the U.S. Federal Trade Commission (“FTC”) and describe the antitrust enforcement policy of these Agencies with respect to the licensing of intellectual property protected by patent, copyright, and trade secret law, and of know-how. That document addresses the analysis of competitive effects associated with intellectual property licensing in product and geographic markets.

5. I have been invited to testify before the U.S. Federal Trade Commission and the U.S. Department of Justice on matters relating to intellectual property and competition. On October 25, 1995, I presented testimony on the analysis of innovation effects on merger policy at the FTC Hearings on Global and Innovation-Based Competition. On February 6, 2002, I presented a keynote address on the first day of the DOJ and FTC Hearings on Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy. On February 25, 2002, I presented testimony on antitrust and intellectual property issues in these hearings.
6. I have consulted for the Antitrust Division of the U.S. Department of Justice on several matters dealing with issues of market definition, including the proposed merger of EchoStar and Hughes-DirecTV satellite services and U.S. v. Microsoft. I have also consulted for a number of private parties regarding the possible competitive effects of several transactions in the telecommunications industry. These include applications to provide in-region interLATA service by Ameritech, SBC Communications, and BellSouth, and the mergers of SBC and Pacific Telesis, SBC and Ameritech, Bell Atlantic and NYNEX, and MCI Worldcom and Sprint.
7. As I explain below, it is my conclusion that the proposed merger of Cingular and AT&T Wireless (“AWS”) will not harm competition in the markets for mobile wireless voice and data services and is in the public interest. Indeed, the merger will promote

¹ Antitrust Guidelines for the Licensing of Intellectual Property, jointly issued by the U.S. Department of Justice and the Federal Trade Commission, 1995, available at www.usdoj.gov/atr/public/guidelines/ipguide.htm.

competition in mobile wireless services by creating a more efficient and innovative competitor.

II. Competition in mobile wireless services is robust

8. The Federal Communications Commission, in its Eighth “Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services” concluded that “...while there are several large, established carriers in the CMRS industry, they have no guarantee of maintaining their market share, and they are faced with consumers that would readily leave carriers that attempted to raise prices or diminish service quality.”²
9. Consumers have benefited directly from competition-driven innovation in mobile wireless services. According to the FCC, “Competitive forces combined with increased capacity have induced companies to offer calling plans with large buckets of relatively inexpensive minutes, free enhanced services such as voicemail and caller ID, and wireless data and mobile Internet offerings.”³ “Continued downward price trends, the continued expansion of mobile networks into new and existing markets, high rates of investment, and churn rates of about 30 percent, when considered together with the other metrics, demonstrate a high level of competition for mobile telephone consumers.”⁴
10. Trends in prices, service quality and innovation in the mobile wireless industry provide evidence of robust competition. Between 1996, when the first PCS networks were deployed, and 2002, the prices of mobile wireless packages have declined while the minutes included in the packages have increased. During this time, average revenue per minute declined approximately 70 percent, from \$0.38 to \$0.11.⁵ Service quality has improved as mobile wireless carriers have built out their networks throughout the

² FCC, “Eighth Report,” *In the Matter of Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, WT Docket No. 02-379, July 14, 2003, ¶ 4. (Hereinafter “Eighth CMRS Report.”)

³ *Id.*, ¶ 34.

⁴ *Id.*, ¶ 57.

⁵ *Id.*, Table 9, p. D-11.

country. Between 1996 and 2002, mobile wireless carriers have invested more than \$100 billion, increasing cell sites by five-fold from approximately 23,000 to 139,000.⁶ Carriers have also added new features and services that have increased the appeal of wireless services to consumers. Wireless Internet was introduced in 1999.⁷ Since then, data transmission speeds have increased more than ten-fold,⁸ and many new applications, including text messaging and color pictures, have been introduced. Today, millions of customers are using these data services.⁹ Other advanced services include Cingular's "FastForward," which automatically forwards a user's calls from his wireless to home wireline phone.¹⁰

11. Even though carriers are using different segments of spectrum and different technologies for providing service, their service offerings are similar, and consumers view the offerings as close substitutes. Wireless customers have shown that they are willing to switch their allegiance in response to attractive service offerings from other providers.¹¹ The FCC reported that in 2002, nearly one-third of mobile wireless customers leave their carriers each year.¹² Competition in the mobile wireless industry has become even more intense with the implementation of wireless local number portability beginning in November 2003, which allows consumers to retain their mobile phone numbers when they switch carriers.¹³

⁶ *Id.*, Table 1, p. D-2.

⁷ Dube, Jonathan, "Cutting the Cord: New Wireless Internet Services Set to Deliver," *ABCNews.com*, September 27, 1999.

⁸ Maier, Matthew, "The Real 3G," *Business 2.0*, October 28, 2003.

⁹ For example, Cingular reports 6.6 million active data services users as of year-end 2003 and Sprint PCS reports 5.5 million data subscribers as of 4Q03 (up 400,000 from the previous year). See "Item 1. Business: Overview," *Cingular Wireless Annual Report on Form 10-K*, December 31, 2003, p. 2 and "Wireless Data Leadership," *PCS Group: Fourth Quarter and Full Year 2003 Investor Update*, February 3, 2004, slide 11.

¹⁰ Rosenbluth, Todd, "Will Phone Users Cut Their Cords?" *BusinessWeek Online*, November 24, 2003. See also "Cingular Wireless – FastForward," *Cingular Wireless website*, available at http://www.cingular.com/beyond_voice/fastforward.

¹¹ Backover, Andrew, "Keep-your-cell-number rules to begin Monday," *USA Today*, November 20, 2003. Available at http://www.usatoday.com/money/industries/telecom/2003-11-20-wireless_x.htm.

¹² Eighth CMRS Report, ¶ 217.

¹³ "FCC Provides Information for Consumers on Wireless Local Number Portability," *FCC News Release*, November 4, 2003. On November 24, 2003, wireless local number portability (WLNP) was implemented in the 100 largest metropolitan areas; by May 24, 2004, WLNP will be available to all customers.

12. Trends in aggregate subscriptions to mobile wireless services illustrate the power of consumer choice in this industry.¹⁴ Table 1 provides percentage shares based on year-end subscribers for the six national carriers and all other regional carriers. It shows that recent entrants into the mobile wireless industry have achieved significant shares of total subscribers at the expense of the established cellular providers. Between 1999 and 2003, the major national carriers with cellular licenses (Verizon Wireless, Cingular and AWS) have lost a combined eight percentage points of aggregate subscriber share, and the newer national PCS and SMR carriers (Sprint PCS, T-Mobile, and Nextel) have gained 11 percent. These share trends clearly demonstrate that there are no strong incumbency effects in the provision of mobile wireless services.

Table 1: Subscriber Shares of Mobile Wireless Providers¹⁵

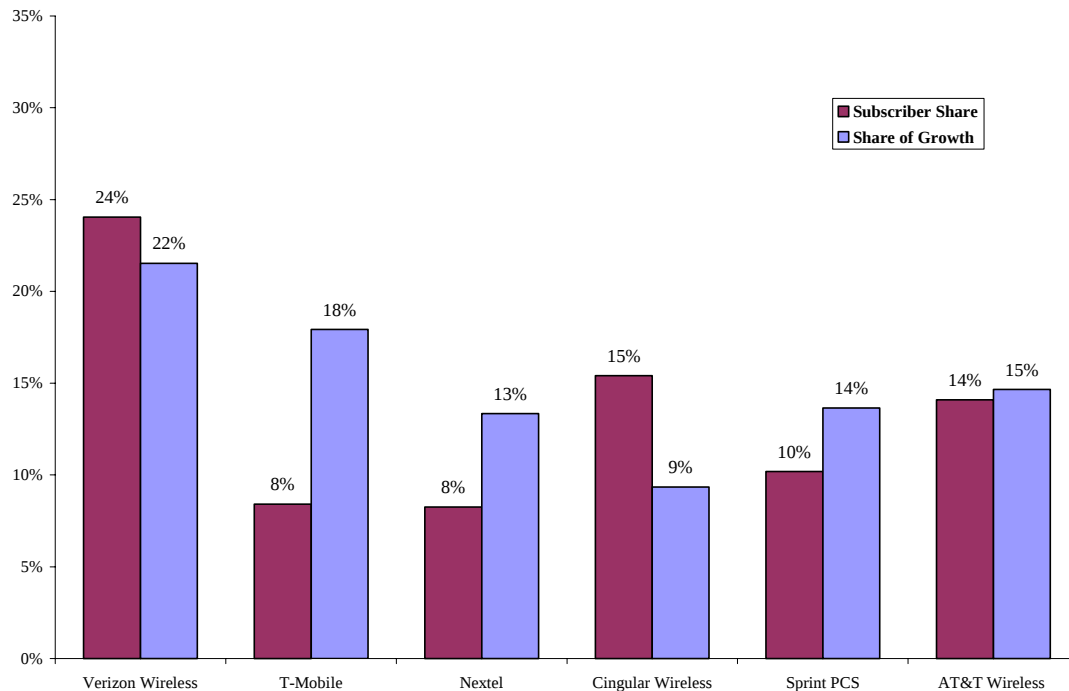
Carrier	1999	2000	2001	2002	2003
Verizon Wireless	30%	25%	23%	23%	24%
Cingular Wireless	19%	18%	17%	16%	15%
AT&T Wireless	12%	14%	14%	15%	14%
Sprint PCS	7%	9%	11%	10%	10%
Nextel	5%	6%	7%	8%	8%
T-Mobile	3%	4%	5%	7%	8%
Regional Carriers	24%	24%	23%	21%	20%
Total	100%	100%	100%	100%	100%

13. Net subscriber additions show the net new customers that choose a carrier and provide a better measure of the success of each carrier in the current market. Net adds are the difference between the number of new subscribers for a company's service and the number of existing subscribers that terminate their service ("churn"). A provider's subscriber share is growing if its share of net new subscribers is larger than its current share of total subscribers, and its subscriber share is falling if its share of net new subscribers is lower than its current share of total subscribers. Thus, a comparison of a carrier's share of net new subscribers with its share of total subscribers is an indicator of whether the carrier is becoming a more or less important force in the supply of mobile wireless services.

¹⁴ As I discuss later, revenue provides a more accurate portrayal of competition. I provide historical data based on subscribers here because subscriber information is more readily available and is useful in assessing industry trends.

14. Figure 1 shows both the subscriber share and the share of net new subscribers for each of the national carriers over the three-year period 2000-2003. The figure shows that the aggregate shares of T-Mobile, Nextel and, to a lesser extent, Sprint PCS, were growing over this time period while Cingular and Verizon Wireless were losing share.

Figure 1: Share of Total Subscribers and Share of Net New Subscribers, 2000-2003

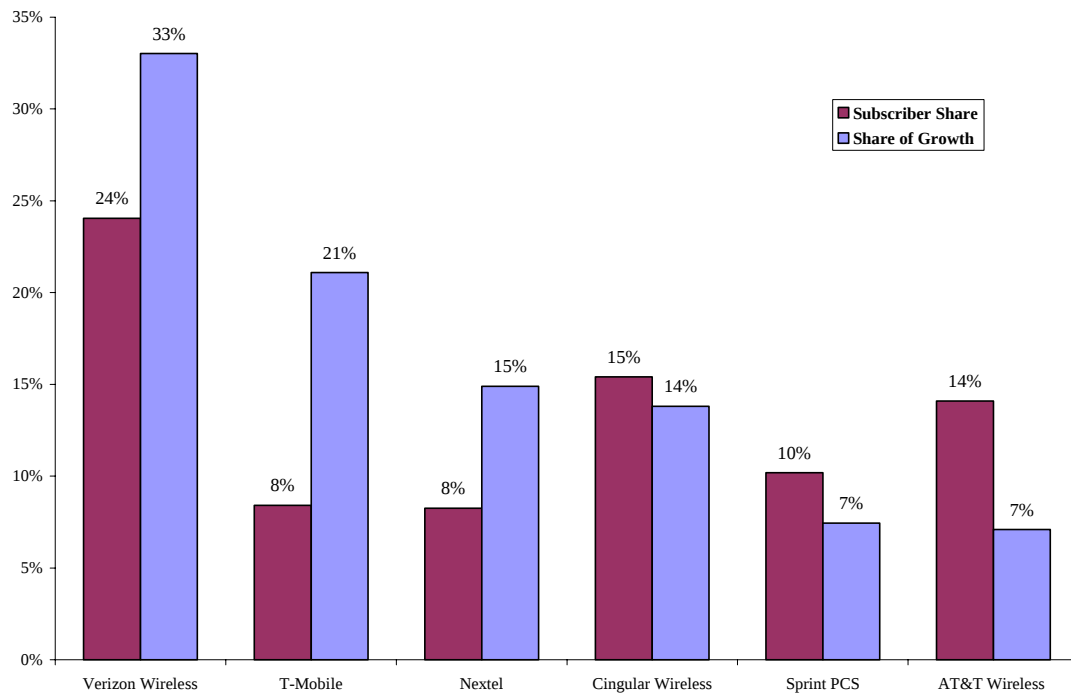


Sources: FCC CMRS Competition Reports; company 10-K reports; company Q4 2003 financial results; CTIA website.

15. Figure 2 repeats this exercise for the most recent year, 2003. This figure shows that AWS and Sprint PCS joined Cingular in the category of declining firms over this more recent time period, while T-Mobile, Verizon Wireless and Nextel gained share.

¹⁵ Sources: FCC CMRS Competition Reports; company 10-K reports; company Q4 2003 financial results; CTIA website. Regional Carriers = Total – National Carriers.

Figure 2: Share of Total Subscribers and Share of Net New Subscribers, 2002-2003



Sources: FCC CMRS Competition Reports; company 10-K reports; company Q4 2003 financial results; CTIA website.

16. The disparity between the fastest growing providers and the merging companies is even more pronounced when viewed from the perspective of subscriber net additions in the fourth quarter of 2003. Table 2 shows that in the fourth quarter of 2003, Verizon Wireless and T-Mobile each added more than 1 million customers representing 28 percent and 19 percent respectively of net subscriber additions, while AWS added only 128,000 subscribers, representing just 2 percent of net additions.

Table 2: Net Subscriber Additions by Carrier¹⁶

Company	Q4 2003	
	Subs ('000)	Share (%)
Verizon Wireless	1,496	28%
T-Mobile	1,015	19%
Cingular Wireless	642	12%
Nextel	553	11%
Sprint PCS	390	7%
AT&T Wireless	128	2%
Regional Carriers	1,029	20%
Total	5,253	100%

17. Incumbency has not shielded Cingular or AWS from the forces of competition. The aggregate positions of both Cingular and AWS have been eroding over the past few years and the pace of this erosion has accelerated. T-Mobile, Nextel and Sprint PCS have become major players in the industry even though they were relatively late entrants. Verizon Wireless stemmed its early loss of aggregate share by introducing and aggressively promoting national calling plans and by achieving a high ranking in terms of network quality. In a J.D. Power 2003 survey of mobile wireless users, Verizon Wireless had the highest service quality rating.¹⁷ T-Mobile's success is due largely to aggressive pricing and promotions.¹⁸
18. Competition and innovation have persisted for mobile wireless services despite large changes in the structure of the industry. The six largest wireless operators' share of all mobile subscribers increased from about 55 percent in the mid-90s to about 80 percent

¹⁶ Q4 2003 Financial Results of named companies; CTIA website.

¹⁷ "J.D. Power and Associates Reports: Verizon Wireless Ranks Highest in Network Quality Performance," *J.D. Power and Associates Press Release*, July 29, 2003. Consumer Reports reached the same conclusion in their 2003 and 2004 surveys. See "Cellular Service Ratings," *Consumer Reports*, February 2003, p. 17 (hereinafter "Consumer Reports 2003"); "Ratings: Cellular Carriers," *Consumer Reports*, February 2004, p. 16 (hereinafter "Consumer Reports 2004").

¹⁸ Meyer, Dan, "T-Mobile USA exploits niche as value leader; Carrier could win in WLNP rollout," *RCR Wireless News*, November 3, 2003.

in 2000,¹⁹ yet prices fell from an average of \$0.43 per minute in 1995 to \$0.11 in 2002.²⁰

III. The merger will strengthen competition by creating a more efficient and effective competitor

19. Without this merger, both Cingular and AWS would be constrained in their abilities to roll out ubiquitous high-speed 3G services to large numbers of consumers in a timely manner.²¹ As a consequence, they would become more distant competitors to Verizon Wireless and possibly other mobile wireless providers that face fewer constraints for upgrading their services. The merger will enable the merged company to increase service quality and roll out high-speed services in more areas. The merger will create a more potent competitor and stimulate competition to the benefit of consumers.
20. The trend in the demand for mobile wireless services is for high quality voice and advanced services, including high-speed data and video services, available over large geographic areas with no roaming charges.²² For Cingular and AWS to compete successfully for mobile wireless customers they must be able to provide advanced services that operate consistently and reliably over large areas. Neither Cingular nor AWS can do this as quickly, if at all, on its own. Both companies face serious spectrum limitations that stem from the evolutionary path of their network technologies and legacy service obligations. Cingular currently has coverage in only 87 of the top 100 MSAs.²³ The merger will allow the combined company to offer facilities-based service in 49 states and in 97 of the top 100 CMAs.
21. Both Cingular and AWS rely on three different technological platforms to offer voice and enhanced data services. They use the older analog cellular AMPS technology to serve customers that have analog phones or subscribe to analog services such as On-

¹⁹ Hazlett, Thomas W., "Is Federal Preemption Efficient in Cellular Phone Regulation?" *Federal Communications Law Journal*, Vol. 56(1):155-238, December 2003, pp. 196-197 (Figure 2).

²⁰ Eighth CMRS Report, Table 9, p. D-11.

²¹ Hogg/Austin Declaration, ¶ 6; Slemons Declaration, ¶ 9.

²² Declaration of Marc P. Lefar, ¶ 4.

²³ Declaration of Marc P. Lefar, ¶ 16.

Star. They offer digital service at 850 and 1900 MHz using the TDMA technology, and they also provide GSM digital voice services and GPRS and EDGE for data services that require faster transmission speeds.²⁴ By combining the spectrum of Cingular and AWS and using spectrum more efficiently, the merger will accelerate the introduction of data services and the evolution toward broadband third generation (3G) services while simultaneously providing improved quality of voice and other current (2.5G) services.

22. Each of these three technologies requires spectrum that is dedicated to that technology. In some areas, Cingular has no more than the original 25MHz of spectrum that was licensed in the first cellular allocations. A typical Cingular urban wireless system with only 25 MHz of spectrum requires about 4 MHz for analog AMPS service and 11 MHz for TDMA digital service. This leaves only 10 MHz available for advanced GSM and GPRS/EDGE services.²⁵
23. GSM carriers require considerable bandwidth to provide advanced wireless services to large numbers of users. High-speed service using the UMTS protocols requires a minimum of 10 MHz of clear spectrum (two paired 5 MHz channels) for a single channel and 30 MHz or more in regions where there is high demand.²⁶ UMTS is the third stage in the evolution to high-speed GSM service after GPRS and EDGE, and should be available at speeds up to 10 Mbps by 2005-06. It would compete with high-speed technologies offered by other carriers, such as 1xEV-DO or 1xEV-DV.²⁷

²⁴ GPRS is an abbreviation for General Packet Radio Service and EDGE is an abbreviation for Enhanced Data rate for Global Evolution. GPRS is referred to as a 2.5G technology, midway between second generation digital and third generation wideband service, while EDGE is an initial stage of 3G technology. See Hogg/Austin Declaration, ¶ 17.

²⁵ According to William Hogg and Mark Austin, absent the merger, Cingular will not be able to meaningfully reduce the amount of spectrum it dedicates to analog service until the FCC eliminates the requirement to provide analog service in 2008. Hogg/Austin Declaration, ¶ 30.

²⁶ See the joint declaration of William Hogg and Mark Austin, ¶ 35. UMTS stands for Universal Mobile Telephone System and provides average download speeds of 200-300 kbps, with maximum download speeds of 2 Mbps to 10 Mbps, depending on whether a technological enhancement known as High Speed Downlink Packet Access (HSDPA) is employed. Hogg/Austin Declaration, ¶ 18.

²⁷ 1xEV-DO and 1xEV-DV are high speed technologies used by CDMA carriers such as Verizon Wireless. Hogg/Austin Declaration, ¶ 20.

24. In many areas, neither Cingular nor AWS, on its own, has sufficient spectrum to provide 3G data service, while also providing voice service to its legacy analog and digital customers. Even after Cingular's acquisition of PCS licenses from NextWave, Cingular will have 25 MHz or less of spectrum in a majority of the top 50 MSAs.²⁸ Without additional spectrum, many consumers will be denied the ability to obtain high-speed UMTS data services from either Cingular or AWS.
25. The merger is an opportunity for both companies to obtain the spectrum needed to offer the advanced services that consumers desire. Both companies rely on the AMPS, TDMA, and GSM technologies to offer analog and digital voice and advanced digital services. They face similar spectrum limitations and in many areas have equipment in place that can be used more efficiently after the merger. The combined companies could aggregate their analog and TDMA service where they have overlapping service. This aggregation would achieve technological economies of scale by reducing required spectrum overhead and by exploiting trunking efficiencies.²⁹
26. Overhead refers to the bandwidth that must be reserved to provide the functions necessary to manage the use of analog, TDMA, or other service. By combining their analog and TDMA customers, the merged company can save spectrum by eliminating some of this overhead.³⁰ Trunking efficiencies refer to the increase in throughput that occurs by aggregating call volumes. With separate networks, a call on AWS's network may be blocked even if capacity is available on Cingular's network, and vice versa. Aggregation ensures that both companies' facilities are available to meet surges in call volumes and, for a given amount of total capacity, increases service quality by reducing the probability of blocked or dropped calls.³¹

²⁸ Hogg/Austin Declaration, ¶ 27.

²⁹ Hogg and Austin estimate that 30% or more of Cingular and AWS sites are either already collocated or sufficiently close to permit combining the sites and trunking their voice channels together. Hogg/Austin Declaration, ¶ 58.

³⁰ Where the companies have overlapping service, the merger would eliminate redundant control channels by reducing the number of networks from six to three. Hogg/Austin estimate that this would save about 7 MHz of bandwidth. Hogg/Austin Declaration, ¶ 60.

³¹ See the Hogg/Austin Declaration for a detailed explanation of these efficiencies.

27. The merger also creates a larger, integrated footprint for the merged company. This makes it easier to roll out advanced services that can be delivered uniformly and consistently to customers at a national level. The larger integrated footprint not only helps with the rollout of advanced services, it also makes it possible to offer voice services (such as voicemail) with consistent functionality across the country. The larger customer base also makes it easier for the combined company to amortize the upfront costs of advanced services.
28. In summary, the merger will improve the utilization of the company's available spectrum. This will allow the company to improve service quality in the short run and will reduce the need to split cell sites to maintain current levels of service quality over the near term (something that is not possible in all areas). Over the longer term, the merged companies can integrate their existing analog, TDMA, and GSM networks, coordinate network enhancements, and rationalize cell sites and network expansion. This will allow the merged firm to offer advanced broadband services sooner and in more places than each company could do on its own.
29. Cingular estimates that the efficiencies from combining the Cingular and AWS networks will generate operating and capital expense savings of more than \$1 billion in 2006 and more than \$2 billion per year in the following years as a merged entity.³²
30. Cingular and AWS differ from other mobile wireless service providers, which either do not have legacy analog customers (Sprint PCS, T-Mobile, and Nextel) or use different technologies that can be continuously upgraded to provide faster transmission speeds (Verizon Wireless, Sprint PCS, and Nextel). Both Cingular and AWS require additional spectrum to allow migration to advanced services on a path compatible with GSM technology while also meeting existing demands for their TDMA and analog services. Carriers such as Verizon Wireless and Sprint PCS that use the CDMA technology can upgrade their service to 3G in a way that is technically compatible with their 2G service and need not set aside blocks of spectrum for serving customers relying on multiple legacy technologies (Sprint has no legacy customers at all, and

³² Declaration of Steve McGaw, ¶ 23.

Verizon has no 2G legacy technology, only analog). Moreover, unlike AWS and Cingular, pure PCS carriers such as T-Mobile and Sprint PCS are not required to provide analog service and, as a pure GSM carrier, T-Mobile does not need the additional spectrum required to provide TDMA service. Nextel is not required to provide analog service because it is licensed as a specialized mobile radio carrier and uses only a single technology, iDEN. Of the two national CDMA carriers, only Verizon Wireless is required to provide analog service. CDMA can be upgraded to provide faster transmission speeds while retaining backward compatibility for existing customers. CDMA networks can therefore deploy high-speed 3G technologies on the same platform as their lower speed data and voice services. This reduces the total amount of spectrum required for deployment of advanced, high-speed services.

31. Verizon Wireless is ahead of Cingular and AWS in the provision of high-speed 3G technologies. Verizon Wireless currently offers EvDO data service in the Washington, D.C. and San Diego, California areas with end-user speeds averaging 300-500 kbps, and has announced plans to introduce this service nationally.³³ Sprint PCS and Verizon Wireless appear to have sufficient spectrum to introduce high-speed 3G service in essentially all urban areas they serve, and T-Mobile has sufficient spectrum to do so in many areas it serves, although it has chosen to pursue a Wi-Fi business strategy for broadband wireless service to date.³⁴ The merger does not change the ability of these other carriers to roll out high-speed services. Absent the merger, each company would still be using its spectrum, and that spectrum would be no more available for use by other carriers than it will be post-merger.
32. Due to spectrum limitations, Cingular will be able to introduce high-speed UMTS service in only 38 of the top 100 metropolitan areas and doing so will place limits on both 2G and 3G services in those areas.³⁵ AWS faces similar constraints; the merger may expand AWS's coverage within its licensed area even if it does not broaden that licensed area. After the merger, Cingular estimates that the combined company will be

³³ "Verizon Wireless Announces Roll Out of National 3G Network," *Verizon News Release*, January 8, 2004. Available at <http://news.vzw.com/news/2004/01/pr2004-01-07.html>. See also Declaration of Steve McGaw,

³⁴ Hogg/Austin Declaration, ¶¶ 38, 66.

able to offer high-speed UMTS service in 75-80 of the top 100 metropolitan areas. The merger will enhance competition in mobile wireless services by allowing Cingular and AWS to close the growing technology gap between their services and the advanced services offered by their competitors.

IV. Principles of market definition

33. Market definition is often a helpful step in antitrust analysis of mergers because it can help to identify where alleged competitive harms may occur and provide a framework to estimate the magnitude of any harm to consumers.
34. Markets have two principal dimensions: product and geographic scope. A product market is a collection of goods or services that consumers consider as substitutes for each other.
35. While there are several different approaches to market definition, the DOJ/FTC Horizontal Merger Guidelines provide a useful approach to market definition that is widely accepted and used by experienced antitrust economists.³⁶ A relevant product market is a product (or group of products) for which a firm that is the sole provider of the product in a geographic area would profitably impose a small but significant and non-transitory increase in price (the SSNIP test), holding constant the terms of sale of all other products. If, in response to a SSNIP, a sufficient number of consumers would substitute other products to make the price increase unprofitable, then the assumed product market is too small to be a relevant product market for antitrust analysis. Competitive effects in such a small market are unlikely if even a hypothetical monopolist could not profitably raise prices. The Merger Guidelines start by applying the SSNIP test to a narrowly defined product and then include other next-best substitutes if the SSNIP is not profitable.³⁷

³⁵ Hogg/Austin Declaration, ¶ 40.

³⁶ See DOJ/FTC, “Market Definition, Measurement and Concentration,” *Horizontal Merger Guidelines*, April 2, 1992 (revised April 8, 1997), §1.0. (Hereinafter, “Horizontal Merger Guidelines.”)

³⁷ *Id.* at §1.11.

36. The Merger Guidelines SSNIP test is posed from the perspective of a hypothetical monopoly supplier, but the profitability of the price increase clearly depends on the choices available to consumers. In evaluating the SSNIP test, the Agencies note that they take into account evidence including, but not limited to, the following:

- (1) evidence that buyers have shifted or have considered shifting purchases between products in response to relative changes in price or other competitive variables;
- (2) evidence that sellers base business decisions on the prospect of buyer substitution between products in response to relative changes in price or other competitive variables;
- (3) the influence of downstream competition faced by buyers in their output markets; and
- (4) the timing and costs of switching products.

V. The Relevant Product Markets are Mobile Wireless Voice and Data Service

37. I conclude that there are two relevant product markets for analysis of any competitive effects from the proposed merger: mobile wireless voice services interconnected with the public switched telephone network and mobile wireless data services. These products include services in the cellular frequencies at 850MHz, the PCS frequencies at 1900 MHz, and specialized mobile radio.³⁸

38. As noted by the FCC in its Eighth CMRS Report, “from a customer’s perspective, digital service in the cellular or SMR bands is virtually identical to digital service in the PCS band.”³⁹ It is not necessary that every consumer views cellular, PCS, and SMR as perfect substitutes for each other for these services to be in the same relevant product market. It is only necessary that a sufficient number of consumers are willing to substitute between these services to discipline an attempted price increase. This is the case, as evidenced by the fact that consumer substitution between these mobile wireless services is sufficient to affect business decisions regarding the pricing of these services.

³⁸ All of these technologies, including both analog and digital services, use a series of low-power transmitters to serve relatively small areas (‘cells’), and employ frequency reuse to maximize spectrum efficiency. The introduction of digital technology enabled better sound quality and improved spectral efficiency.

³⁹ Eighth CMRS Report, ¶ 34.

Prices for these services tend to follow each other closely with little difference in prices for cellular, PCS or SMR services, suggesting that these products compete aggressively with each other.

39. Carriers such as Cingular, AWS, Verizon Wireless and others with both cellular and PCS spectrum make no distinction between the two in their national marketing plans, and consumers do not appear to value them differently.
40. Mobile wireless carriers such as Cingular and AWS analyze the price and features offered by competitors and do not distinguish between technologies such as CDMA, GSM or iDEN, or the frequency band over which they are served.⁴⁰ This is further evidence that these services are all close substitutes.
41. The hypothetical monopolist test would not support a conclusion that a relevant product market can be defined narrowly to encompass a single technology (e.g., CDMA) or a single frequency band (e.g., 850 MHz). Consumers could and likely would switch to other technologies or frequencies that they regard as very close substitutes.
42. The hypothetical monopolist test also would not support a conclusion that a relevant product market can be defined narrowly to encompass only one or a few mobile wireless service providers. Switching between alternative mobile wireless providers is relatively easy. Churn data provided by AWS indicates customer churn rates between 2 and 4 percent per month indicating that 20 to 40 percent of customers churn each year. Wireless local number portability, which allows consumers to change mobile wireless providers and keep the same phone number, further reduces the cost of switching providers. Telephia surveys indicate that when customers were asked why they remained with their current provider, 40 percent of respondents selected “I don’t want to change my current phone number” as one reason.⁴¹ In addition, the use of one-

⁴⁰ Declaration of Marc P. Lefar, ¶ 8.

⁴¹ “Ex Parte Letter of Michael Mowery, General Counsel for Telephia, Inc.,” *In the Matter of Verizon Wireless’s Petition for Partial Forbearance from the Commercial Mobile Radio Services Number Portability Obligation*, Before the Federal Communications Commission, WT Docket No. 01-184, January 22, 2002. Available at http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6512980007.

year or two-year contracts by some carriers has not proven to be a significant barrier to customer switching, as demonstrated by the significant industry churn statistics.

43. The hypothetical monopolist test supports the conclusion that mobile wireless voice service interconnected with the public switched telephone network is a relevant product market for antitrust analysis. Few consumers would substitute other telecommunications services, such as wireline, for mobile wireless in response to a small but significant and non-transitory increase in price. It follows that a firm that is a sole supplier of mobile wireless voice services could profitably increase price, and hence mobile wireless voice service is a relevant antitrust product market according to the Merger Guidelines hypothetical monopoly test.
44. The relevant product market for the analysis of this transaction excludes wireline services. Although there is some competition between wireless and wireline service, it is not currently sufficient to conclude that a wireless-only product market is too small for antitrust analysis of this transaction. Specifically, consumer substitution from wireless to wireline would not be sufficient to make unprofitable a small but significant and non-transitory price increase by a hypothetical monopoly supplier of mobile wireless voice services. At the present time, wireline service is sufficiently differentiated from wireless service to exclude wireline from the relevant product market.
45. Mobile wireless service providers offer multiple rate plans that are differentiated according to the minutes in the rate plan, when these minutes can be used, roaming charges, etc. Some of these plans are targeted to residential users, others to small and large businesses. I have not distinguished these offerings in my analysis of the relevant product market. There is a continuum of possible plans and supply-side substitution between these plans. Each plan, taken alone, would fail the hypothetical monopoly SSNIP test. A hypothetical monopolist could not, for example, raise the price of a 1,000-minute plan because consumers could easily switch to other plans.
46. Mobile wireless data service refers to the delivery of non-voice information to a mobile device and includes applications such as short messaging service, email, and access to

the Internet. Consumers would not substitute mobile wireless voice service in response to a small but significant and non-transitory increase in the price of data services so a hypothetical monopolist could increase the price of data services. For this reason, I conclude that at present there is a separate relevant product market for mobile wireless data services.

47. It is likely that mobile wireless voice and data markets will converge in the near future. Many of the national mobile wireless voice providers offer data services in conjunction with voice services. Furthermore, it is likely that voice and data services will be provided over the same networks as the carriers increase their transmission speeds. Indeed, the FCC has concluded that it is not necessary to treat voice and data service as separate relevant products for antitrust analysis. In analyzing transfers and assignments involving cellular and PCS licenses, the Commission has concluded that the relevant market is “all commercially available two-way, mobile voice and data services providing access to the public switched telephone network via terrestrial systems.”⁴² The Commission also noted that “mobile voice and mobile data services are no longer clearly delineated in the marketplace.”⁴³
48. Treating mobile wireless voice and data services as separate product markets does not affect my conclusion that the proposed merger is unlikely to harm competition. First, many data services (such as short message service and video transmissions) are sold in conjunction with mobile wireless voice service and need not be analyzed separately. Second, all of the national wireless carriers offer stand-alone data services, such as Cingular’s Data Connect, which enables users to connect laptop PCs or PDAs to corporate databases or the Internet. To the extent that similar firms provide similar mobile wireless and data services (including stand-alone services) and consumers’ reactions to price movements for these services are also similar, the analysis of price impacts on stand-alone data services from the proposed transaction parallels the

⁴² “Memorandum Opinion and Order,” *In re Applications for Consent to the Assignment of Licenses Pursuant to Section 310(d) of the Communications Act from NextWave Personal Communications, Inc., Debtor-in-Possession, and NextWave Power Partners, Inc., Debtor-in-Possession, to subsidiaries of Cingular Wireless LLC*, Before the Federal Communications Commission, WT Docket No. 03-217 (FCC 04-26), February 12, 2004, ¶ 29.

⁴³ Eighth CMRS Report, ¶ 15 (footnote reference omitted).

analysis of impacts on mobile wireless voice services.⁴⁴ I make this assumption in this declaration and focus only on mobile wireless voice service interconnected with the public switched telephone network.

VI. Relevant geographic market

49. I conclude that the proposed merger should be analyzed from the perspective of a national market.
50. The approach to geographic market definition in the DOJ/FTC Merger Guidelines parallels the approach to product market definition. The geographic market is the smallest area in which a hypothetical monopolist could profitably impose a small but significant and non-transitory increase in price.
51. In the past, it was generally agreed that there were local relevant geographic markets for mobile wireless service. The number of carriers that market mobile wireless service in a particular locality may limit the plans that are available to consumers in that locality. Similarly, the number of retailers of handsets and related equipment in a region may affect consumer choices. This is not an obvious conclusion. Consumers can, and do, purchase wireless service plans at locations that are remote from where they use the service. Some consumers shop on the Internet.⁴⁵
52. Even if the relevant geographic markets for wireless calling plans and equipment are local, it is my conclusion, for the reasons that I describe below, that the geographic scope of competition in the provision of mobile wireless calling plans should be analyzed as national.
53. Pricing for mobile wireless plans and equipment is national because consumers prefer plans that have a large geographic scope, and it is efficient for the national mobile

⁴⁴ Cingular operates a data-only network called Mobitex which is used primarily for business applications such as email. AWS does not have such a network, so services offered on Mobitex are not affected by the merger. Moreover, services provided on the Mobitex network compete with stand-alone data services offered by all national carriers on their PCS/cellular networks.

⁴⁵ According to AWS Chief Market Officer Mike Sievert, 10 percent of purchases are made from the company's website. See also Lefar Declaration, ¶ 13.

wireless carriers to advertise and price their services and equipment nationally. The national mobile wireless service providers have very large advertising budgets and include detailed price information in their ads. Placing ads at different locations with different price offers would be costly and could create consumer confusion. This is an industry with a high incidence of customer service calls, which would be more difficult to service if each area had a different pricing plan. Furthermore, business consumers often want the same price and service for all their employees, regardless of their location.

54. The trend in consumer demand is for mobile wireless service that covers a large geographic region, and consumers increasingly are purchasing national calling plans. Initially, most cell phones were designed for fixed use in an automobile,⁴⁶ and roaming service outside of the local region typically was very expensive. The FCC awarded the first cellular licenses on a local (MSA and RSA) basis, and competition began along local lines. In the early years of the cellular industry in the U.S., cellular providers offered calling plans that were tailored to local conditions. The FCC's first report on CMRS competition indicates that in 1994 Bell Atlantic offered a "package with a low monthly fee (\$14.99) and relatively modest per minute charges (thirty-five cents) for calls made in, and received from, a relatively small geographic area. However, calls outside the defined area are significantly more expensive (ninety-nine cents per minute)."⁴⁷ The high per-minute prices for out-of-area calls indicate that cellular was marketed primarily as a service that offered mobile telecommunications for local users.
55. Over time, mobile wireless service providers responded to consumer demands by providing services that encompassed much larger areas without roaming charges and included long distance service at no extra cost. Consolidation and clustering by carriers and broader FCC license areas for PCS service facilitated this trend. The areas in which customers could make calls without incurring roaming charges increased from the MSA level, to combinations of nearby CMAs and adjoining RSAs, and then grew

⁴⁶ FCC, "First Report," *In the Matter of Implementation of Section 6002(B) of the Omnibus Budget Reconciliation Act of 1993 Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services*, FCC 95-317, August 18, 1995, ¶ 21. (Hereinafter "First CMRS Report.")

to encompass entire states and ultimately almost the entire nation. Mobile wireless providers also included long distance service without additional charges. The cell phone became the personal phone that could be used anywhere for calls to any location, usually at the same per-minute cost.

56. Although some new consumers still purchase regional calling plans, the trend clearly is toward national plans, and regional plans with increased geographic coverage. Cingular presently does not offer to new customers any calling plans with a geographic scope smaller than an entire state. AWS local service areas are at least a full state and in most cases include several states, although they may have some areas where roaming is not free.⁴⁸ Furthermore, the pricing of regional plans appears to be driven by the prices of national plans. Most major carriers price regional and national plans similarly, suggesting that they prefer that consumers subscribe to national plans.
57. According to Cingular's Chief Marketing Officer, Marc Lefar, the trend toward national calling plans was driven in part by a desire to alleviate customer confusion about the geographic boundaries of their rate plans. Inadvertent use of wireless phones outside of these boundaries incurred large roaming charges and led to significant customer dissatisfaction, as well as increased carrier call center volume and other customer care costs.⁴⁹ Cingular has found that national plans have lower churn, and consequently more favorable financial results, and provide a better customer experience resulting in fewer customer service calls.⁵⁰ In the six months from August 2003 to January 2004, Cingular's subscriber count for nationwide plans grew 11.6%, while its subscriber count for local and regional plans grew only 3%.⁵¹ AWS indicates that 59 percent of February 2004 gross adds were on national plans.⁵²

⁴⁷ First CMRS Report, ¶ 23.

⁴⁸ AWS Local Plan coverage maps on website; Declaration of Marc P. Lefar, ¶ 12. There are some legacy consumers on service plans with smaller geographical coverage.

⁴⁹ Declaration of Marc P. Lefar, ¶ 9.

⁵⁰ Declaration of Marc P. Lefar, ¶ 9.

⁵¹ Declaration of Marc P. Lefar, ¶ 11.

⁵² Conversation with Mike Sievert, AWS Chief Marketing Officer.

58. Cingular has been emphasizing national calling plans for over a year and since February 2004 has implemented a comprehensive strategy of selling only national and large regional plans. Cingular's goal is to add the vast majority of new customers to national plans by year-end 2004.⁵³ Cingular believes that "half of Verizon's base is on America's choice plans" and "70% of intake is on America's choice plans." Qwest and AT&T (the former parent of AWS) have both recently announced their intention to introduce "national coverage and calling plans."⁵⁴
59. The pricing of mobile wireless plans is determined by national rather than local competitive factors. This is illustrated by the fact that the prices for most mobile wireless plans do not vary according to where they are purchased. I have surveyed the prices for mobile wireless plans offered on the Internet by the six national carriers: Cingular, AWS, Verizon Wireless, T-Mobile, Sprint PCS, and Nextel. All of these carriers offer national plans that provide for free roaming on the carriers' "preferred" networks over the entire U.S.⁵⁵ In the case of regional plans, the home area for Cingular is, at a minimum, the carrier's network across the entire state.⁵⁶ Based on a sampling of cities in large states such as California and Texas, it appears that, with the exception of Nextel, the other national carriers also offer regional plans that encompass an entire state at minimum.
60. I surveyed the lowest prices available in each of the largest 100 metropolitan areas in the U.S.⁵⁷ for national and regional plans that provided a minimum of 500 "anytime"

⁵³ Declaration of Marc P. Lefar, ¶ 11.

⁵⁴ Associated Press, "Two Telephone Companies are Poised to crowd the Cell Phone Market by Going National," February 29, 2004.

⁵⁵ Each carrier provides a map showing its "preferred" network coverage. Generally, this network consists of the carrier's own digital network facilities plus parts of other carriers' networks where the customer's carrier has a specific roaming agreement. For the plans included in my survey, the customer pays roaming charges in any areas where the customer's phone is in service off the "preferred" network.

⁵⁶ Declaration of Marc P. Lefar, ¶ 12.

⁵⁷ The list of the largest 100 metropolitan areas is based on the 100 most populated Cellular Market Areas ("CMAs"), which follow Metropolitan Statistical Area and Rural Statistical Area boundaries ("MSAs" and "RSAs", respectively). For a single zip code within each CMA and I collected the least expensive pricing plan that included at least 500 "anytime" minutes for each carrier. In order to qualify for the lowest price plans, contracts were required for some carriers. The plans collected were from the chosen zip code, and a carrier's coverage may or may not span the entire CMA. Because this was a website survey, its scope was limited. For example, it is possible that there are deals available in stores that are not available on a carrier's website, and vice versa. Prices may have been different prior to conducting this survey and may change after the completion

minutes. I also surveyed prices in 50 small rural areas. I describe the results of this survey in the Appendix. The prices offered by each carrier show remarkable similarity across geographic areas. The Appendix also examines whether pricing for telephone handsets exhibits geographic price variation.

61. My analysis of national and regional prices for calling plans and handset prices shows little to no variation that is correlated with industry structure at a local level. This supports the conclusion that pricing of mobile wireless service is national and that the competitive effects from the proposed merger should be analyzed in a national geographic market.

VII. The transaction is unlikely to lead to higher prices or other anticompetitive effects

62. The merger is unlikely to raise prices or slow the rate of decline of prices in the mobile wireless industry. The proposed merger does not significantly impact the structure of the industry. Currently there are six major national mobile wireless providers and many regional providers. The merger changes the number of national providers from six to five and leaves unchanged the number of regional providers. The characteristics of the firms and consumers in this industry make competitive effects from coordinated behavior unlikely. There is also no evidence that the merger will raise prices or slow the rate of price decline due to unilateral effects. The increase in concentration at the national level from the merger is modest and prices do not correlate with industry structure at the local level. Finally, the merged company will be able to improve service quality for existing services and roll out advanced services for more consumers than each company could accomplish on its own.
63. A merger is unlikely to have any competitive effect if it does not significantly change the structure of the industry. While my analysis focuses primarily on the ability of the other national carriers to discipline an attempted price increase by the merged firm, I

of this survey. Each plan was based on a given number of minutes (at least 500) and variation from this level could yield different results. The website survey did not investigate variations in the following: minutes sharing; mobile-to-mobile minutes; data services (e.g., email, text messaging); extra features (e.g., call forwarding, three-way calling); or adjustments to night/weekend minute periods.

note that additional constraints are available in the form of regional carriers and resellers (including “Virtual Network Operators” such as Virgin Mobile that resell service under a brand that is very attractive to some users). For instance, in my Internet price survey of the top 100 CMAs, I noted the active participation of the regional carriers ALLTEL, US Cellular, Metro PCS, and two AWS affiliates. At least one of these regional carriers was present in 43 of the top 100 CMAs.

64. I have examined concentration in the mobile wireless industry at the national level from the perspectives of total and flow revenue shares. In the revenue share calculations I included each company’s service revenue and equipment sales and other revenue. I obtained subscriber and revenue data for each of the six national carriers from company financial statements.⁵⁸ For the revenue share of regional carriers, I computed the difference between the nationwide subscriber count and the subscribers of the six national carriers and multiplied the difference by the average revenue per subscriber for the national carriers.⁵⁹ Table 3 shows that the Herfindahl-Hirschman Index (“HHI”) based on total revenues is currently 1,573 and would increase by 450 points to 2,023 post-merger.⁶⁰

⁵⁸ Revenue data collected from 10-Ks, Annual Reports and announced 4Q2003 results. Verizon Wireless's 2003 data from Cellco Partnership d/b/a Verizon Wireless 8-K filed January 29, 2004. ALLTEL 2003 data from 2003 10-K. T-Mobile 2003 revenues are an estimate based on 3Q03 year-to-date results.

⁵⁹ Sources of subscriber data: FCC CMRS Competition Reports; company 10-K reports; company Q4 2003 financial results; CTIA website.

⁶⁰ Computing HHIs based on service revenue rather than service, equipment, and other revenue leads to similar HHIs and HHI changes.

Table 3: HHIs Based on National Revenue Share⁶¹

Carrier	Revenue Share		Post-Merger
	2002	2003	
Verizon Wireless	20.1%	21.0%	21.0%
Cingular Wireless	15.3%	14.4%	30.0%
AT&T Wireless	16.3%	15.6%	
SprintPCS	12.6%	11.8%	11.8%
T-Mobile	5.2%	7.5%	7.5%
Nextel	9.1%	10.1%	10.1%
Regional Carriers	21.4%	19.6%	19.6%
Total	100.0%	100.0%	100.0%
Revenue HHI	1,630	1,573	2,023
Revenue HHI Change		(57)	450

65. I used the same revenue data to compute concentration based on revenue flow shares. Table 4 shows that the concentration of revenue flow share is currently 2,081 and would go up 128 points to 2,210 post-merger. The flow share is in many respects a better indication of competition in the market for mobile than total revenue share because it measures how consumers are currently choosing between the different providers of wireless services.

⁶¹ The regional competitors do not compete throughout the entire nation. In 2003, ALLTEL's national revenue share was 4.4%, and US Cellular's national revenue share was 2.4%. Sources: FCC CMRS Competition Reports; company 10-K reports; company Q4 2003 financial results; CTIA website. T-Mobile 2003 revenues are an estimate based on 3Q03 year-to-date results.

Table 4: HHI Based on National Revenue Flow Share⁶²

Carrier	Flow Share 2003	Post- Merger
Verizon Wireless	28.8%	28.8%
Cingular Wireless	6.8%	16.3%
AT&T Wireless	9.5%	
SprintPCS	5.5%	5.5%
T-Mobile	26.8%	26.8%
Nextel	18.7%	18.7%
Regional Carriers	3.9%	3.9%
Total	100.0%	100.0%
Flow Revenue HHI	2,081	2,210
Flow Revenue HHI Change		128

66. After the merger, five national mobile wireless carriers and many regional carriers, resellers, and value-added providers will compete for mobile wireless customers. The combined companies' market share will be 30 percent on a total revenue basis and 16 percent on a flow revenue basis. The low flow share reflects the recent aggressive competition from Verizon Wireless, T-Mobile, and Nextel.
67. The DOJ/FTC Horizontal Merger Guidelines consider a post-merger HHI of 1,800 as the threshold value for a highly concentrated industry, and the Agencies rarely challenge a merger in industries unless the post-merger HHI significantly exceeds 2,000.⁶³ The concentrations statistics for the mobile wireless industry do not suggest that competition in the industry would be adversely affected by the merger. The post-merger HHI based on revenues is around 2,000, the post-merger HHI based on flow revenues is around 2,200, and the merger increases the flow revenue HHI by just over 100 points. These are modest structural changes.
68. The structural analysis alone leads to a conclusion that the proposed merger does not raise significant antitrust concerns. Putting structure aside, I also show that the

⁶² Sources: FCC CMRS Competition Reports; company 10-K reports; company Q4 2003 financial results; CTIA website. T-Mobile 2003 revenues are an estimate based on 3Q03 year-to-date results.

⁶³ -The U.S. antitrust agencies challenged mergers in the telecommunications industry that affected 214 product markets during FY 1999-2003. . Only one of these markets had a post-merger HHI below 2,400. See U.S. Department of Justice and Federal Trade Commission, Merger Challenges Data, Fiscal Years 1999—2003, December 18, 2003, Table 6. Available at <http://www.usdoj.gov/atr/public/201898.htm>.

characteristics of the market for mobile wireless services indicate that anticompetitive effects are unlikely to result from the merger.

69. A merger may lead to higher prices as a result of a coordinated or a unilateral effect. Both effects refer to the ways in which competition may occur in an industry.
70. A price increase as a coordinated effect may occur if firms restrain themselves from competing in order to sustain higher prices. A coordinated effect requires cooperation by two or more firms in the industry and for this reason is associated with implicit or explicit collusion. Coordinating firms refrain from cutting price or increasing output even though such an action would increase their short-term profits because they are aware that other firms in the industry are likely to do the same, and this would lower profits over the longer term.⁶⁴
71. Coordinated interactions can be successful only if all of several conditions apply.⁶⁵
- a) The relative costs and benefits of coordination must be comparable across all of the coordinating firms; otherwise some firms would defect from the coordinated conduct.
 - b) Non-coordinating firms must face limits on their ability to expand capacity. These firms are sometimes called industry “mavericks”.
 - c) Firms must be able to monitor the coordination in price or output by other firms.
 - d) Coordinating firms must be able to punish firms that fail to coordinate their price or output.
 - e) Firms cannot have opportunities for product or other service innovations that would allow them to achieve discrete competitive advantages while escaping punishment by other firms.
72. Coordinated effects are unlikely in the market for mobile wireless services. The industry has a history of price and quality competition and rapid innovation.⁶⁶ Prices have declined rapidly, particularly after the licensing of new PCS spectrum in 1995.

⁶⁴ “Coordinated interaction is comprised of actions by a group of firms that are profitable for each of them only as a result of the accommodating reactions of the others.” Horizontal Merger Guidelines, §2.1.

⁶⁵ “Successful coordinated interaction entails reaching terms of coordination that are profitable to the firms involved and an ability to detect and punish deviations that would undermine the coordinated interaction.” *Id.*

⁶⁶ See, for example, Eighth CMRS Report, pages 30-48, 57-82.

Wireless companies provided new services such as voicemail, caller ID, SMS, and mobile Internet offerings, and developed innovative pricing plans. After the merger, there would be at least 5 major national carriers and more than a dozen regional players serving numerous areas across the country.

73. Cingular and AWS have at times been the innovators of new services and pricing plans, however their conduct is not so different from industry trends to classify them as “maverick” competitors. The history of price declines and the large mix of services and price offerings is inconsistent with a stable relationship required to maintain collusive outcomes. Wireless providers compete in different dimensions, including equipment subsidies as well as monthly price, number of free minutes and how they break down by off-peak and on-peak, roaming charges, and other services, such as on-net free calling. Wireless providers also differ in the quality of service and the amount of excess capacity. The latter, in particular, creates different incentives for price-cutting by different firms in the industry. Newer entrants such as T-Mobile and regional competitors such as MetroPCS are eager to take business from the more established firms and have the capacity to do so. It is unlikely that relationships among the wireless suppliers will become less complex and varied after the merger.
74. A unilateral effect occurs when a merger increases a firm’s profit-maximizing price under the assumption that other firms in the industry do not change their prices. This usually occurs when the merger eliminates a product or service that many consumers consider to be the next-best substitute for the product or service sold by one of the merging firms.
75. A merger is unlikely to cause a price increase due to a unilateral effect if there are other firms with similar cost characteristics that sell products that consumers regard as close substitutes for the products sold by the merging firms. Furthermore, even if there are unilateral competitive effects, they can be offset by marginal efficiencies that cause the merged firm to choose a lower post-merger price.⁶⁷

⁶⁷ Churn data show that consumers leaving AWS and Cingular do not choose the other carrier in proportion to their market shares. This suggests that many consumers do not regard Cingular and AWS to be next-best substitutes.

76. There is some product differentiation in the mobile wireless service industry as a result of differences in call quality, dropped and blocked calls, geographic coverage, and customer service. However, the fact that prices for mobile wireless service plans are similar across the major national wireless service providers suggests that product differentiation is not a primary determinant of competition in this industry.
77. To the extent that there is product differentiation in this industry, the consumer satisfaction surveys by Consumer Reports suggest that the merger would not significantly alter the choices available to mobile wireless consumers. Presently, many consumers of wireless services rate other carriers as superior to both Cingular and AWS. Consumer Reports surveyed consumer evaluations of the major national wireless carriers in 12 metropolitan areas. Table 5 summarizes the scores based on “overall satisfaction.”⁶⁸ Verizon Wireless was ranked highest in every metropolitan area, with an average score of 73. Based on the average score in all 12 areas, AWS was last and Cingular was fourth. A year earlier, Consumer Reports had rated AWS second behind Verizon Wireless for “overall satisfaction” in a survey of six metropolitan areas.⁶⁹

⁶⁸ Consumer Reports 2004, p. 16.

⁶⁹ Based on the average of scores for “overall satisfaction” in the six metropolitan areas surveyed. Consumer Reports 2003, p. 17.

Table 5: Consumer Satisfaction Scores⁷⁰

	Verizon Wireless	T-Mobile	Nextel	AWS	Cingular	Sprint PCS
Atlanta	75	70	66	64	64	63
Boston	73		66	58	62	62
Chicago	71	66	69	63	67	60
Dallas	75	65		66	67	68
Denver	73	65		65		63
Houston	70	67		62	67	65
Los Angeles	72	63	67	58	63	64
New York	71	59	62	58		58
Philadelphia	73	64	67	61	64	60
San Francisco	73			64	60	61
Seattle	74	67		62		65
Washington, D.C.	74		68	63	61	60
Average	72.8	65.1	66.4	62.0	63.9	62.4

78. Currently, many consumers rate Verizon Wireless's service as superior to the services offered by the other carriers. Average scores are about equal for AWS, Cingular, and Sprint PCS, and they are somewhat higher for T-Mobile and Nextel.
79. Post-merger, and absent any reposition of the services offered by each firm, many consumers would still find Sprint PCS to be a comparable alternative to service by the merged firms and many consumers would continue to assign a higher satisfaction score to Verizon Wireless, T-Mobile, and Nextel. Furthermore, according to the Consumer Reports survey, consumers would have better alternatives to the merged firm at every metropolitan area in the survey.⁷¹
80. The merger will benefit consumers by making the combined company a better competitor. Presently, there is a gap between the perceived quality of Cingular and AWS and the perceived quality of the market leader, Verizon Wireless. This gap is likely to widen if the Cingular and AWS are unable to roll out advanced high-speed digital services in most of the nation.

⁷⁰ Consumer Reports, 2004, p. 16.

⁷¹ It is likely that WLNP is increasing competition in the mobile wireless industry by making it even easier for consumers to switch carriers.

81. The merger will help to close this gap. The merger promotes competition by creating a better competitor. The merged firm will be able to compete across all dimensions valued by consumers, including service quality and scope of voice and data services. I noted that coordinated behavior is unlikely in the mobile wireless industry. In the absence of coordinated behavior, competition is enhanced when consumers consider the service offerings of firms to be closer substitutes.
82. The DOJ/FTC merger guidelines note that unilateral effects are unlikely when products are relatively undifferentiated and if the post-merger market share of the merged firm is less than 35 percent.⁷² On a national level, the merger will result in a combined market share of AWS and Cingular of 30.0% based on national revenues and 16.3% based on flow shares. There is some product differentiation in the mobile wireless industry, however it is not particularly large relative to many other industries.
83. Pricing is driven primarily by national competition as evidenced by the fact that mobile wireless prices are not higher in RSAs served by only a few networks. Nor is there evidence of unilateral effects where a carrier has a share greater than 35 percent. In its Eighth CMRS Report, the FCC notes that wireless competition is vigorous even in areas that have relatively few networks: “Moreover, while it appears that, on average, a smaller number of operators are serving rural areas than urban areas, this difference does not necessarily indicate that effective CMRS competition does not exist in rural areas. ... On the contrary,... despite the differing structure of rural markets, effective CMRS competition does exist in rural areas.”⁷³ The evidence is that six national, facilities-based CMRS carriers are not necessary for effective competition. Some rural areas have service from only one or two of the largest carriers, yet competition continues to thrive in those areas. The FCC cites data showing that, “...the average

⁷² “Where the merging firms have a combined market share of at least thirty-five percent, merged firms may find it profitable to raise price and reduce joint output below the sum of their premerger outputs because the lost markups on the foregone sales may be outweighed by the resulting price increase on the merged base of sales.” See Horizontal Merger Guidelines, §2.22.

⁷³ Eighth CMRS Report, ¶ 13.

price of mobile telephone service in rural areas appears to be very similar to the average price in urban areas.”⁷⁴

84. The evidence supports that conclusion that price competition does not decline significantly in regions with only 1 or 2 major carriers rather than 5 to 7 major carriers. My Internet price survey found that major carriers charge the same prices in 50 small RSAs as they do in the top 100 CMAs, with very few exceptions that do not appear to be related to measures of concentration.⁷⁵ This is powerful evidence that the merger of Cingular and AWS is in the public interest and not likely to diminish competition.
85. The merger is unlikely to cause significant price increases from either coordinated or unilateral effects. The merger is likely to reduce operating costs in the short run and will substantially reduce the marginal costs incurred to expand capacity and introduce new high-speed services. These efficiencies will promote lower quality-adjusted prices, which are likely to be larger than any price effects.
86. The merger is also very unlikely to raise prices by reducing inter-modal competition between wireline and wireless services. The proposed merger will have no effect on competition in wireline telephony. Wireless service may improve and prices may fall to the point where more consumers are willing to do without landline service, but it is unlikely that the merged company could change this dynamic. Because mobile wireless competition is national in scope, the merged company is unlikely to raise wireless prices only in its' parents' wireline service territories. If it attempted to do so, given the competitive wireless market, it could not stop or slow wireline to wireless substitution. It would simply lose share, as other wireless carriers would be eager to take the business. Given that the combined company would lack the ability to control such a dynamic, it would have no incentive not to aggressively compete to win such customers. It is also unlikely that competition would be affected by bundling wireline and wireless services. Many telecommunications firms offer bundled services. Rather

⁷⁴ Eighth CMRS Report, ¶ 118.

⁷⁵ My survey covered the smallest 40 of Telephia's "Top 500" as well as the 11 RSAs where Cingular and AWS have overlapping licenses.

than raising prices, bundling has been yet another instrument of price competition in the telecommunications industry.

Appendix

- A1. This Appendix reports the results of a survey of prices for national and regional calling plans offered by the major national and selected regional mobile wireless service providers. I examined prices from the websites of the six national carriers as well as the regional carriers ALLTEL, US Cellular, MetroPCS, and AWS affiliates suggested by the AWS website. The results of the survey are shown in Table A-1 for the top 100 CMAs.
- A2. The national plans showed very little variation.⁷⁶ For Verizon Wireless, Sprint PCS, T-Mobile, Nextel, US Cellular, and MetroPCS, the price was the same for plans purchased at every location. The price was \$49.99 for Verizon Wireless, \$45 for Sprint PCS and ALLTEL, \$39.99 for T-Mobile and Nextel, \$75 for US Cellular, and \$40 for MetroPCS. For Cingular, the price was \$49.99 at all but four locations offering GAIT plans with dual network nationwide coverage: Tampa, FL; Birmingham, AL; Mobile, AL and Lakeland, FL. For plans purchased at these locations the price was \$55.00. For AWS, the price was \$39.99 in all locations except for San Juan, PR, where it was \$49.99.⁷⁷
- A3. Technology, rather than competition, explains the higher prices for Cingular's national plans in the four locations in Alabama and Florida. The prices offered by other carriers for national plans are no different for plans purchased at these locations than they are for plans purchased at other locations. The higher prices for Cingular in these areas relate to the local network configuration. It is my understanding that Cingular has not

⁷⁶ These prices are for a bucket of 500 or more "anytime" minutes per month with on-net roaming for a one or two-year contract. These prices do not include activation charges, where applicable, or the price of purchasing a phone. I analyze equipment discounts later in this section. The carriers provided differing amounts of minutes for the quoted prices. Cingular (except for GAIT plans), AT&T Wireless (except for Puerto Rico), T-Mobile, and ALLTEL provided 600 minutes; while Verizon Wireless, Sprint PCS, and Nextel provided 500 minutes. US Cellular provided 700 minutes. MetroPCS provided unlimited minutes with free long distance from the home calling area. Although the MetroPCS plan did not allow for free nationwide roaming, it was categorized with the "national" plans to distinguish it from the cheaper MetroPCS plan that did not include free long distance.

⁷⁷ In four areas (Richmond, VA, Greenville, SC, Charleston, SC, and Columbia, SC), AWS did not offer service, but its website directed potential customers to AWS's affiliate SunCom. SunCom offered national plans for \$99.95 in all four locations. In two additional areas where AWS did not offer service (Cincinnati, OH and Dayton, OH), AWS's affiliate, Cincinnati Bell, offered service for \$69.99. In some areas AWS offered no service and did not suggest an affiliate.

yet upgraded its network to GSM in these four areas. Therefore, a customer purchasing a phone and a plan in these service areas will require a dual-mode (“GAIT”) phone to use the TDMA network in the home area and the GSM network when roaming in areas where Cingular operates a GSM-only network. Consumers that purchase this service can access Cingular’s national TDMA, analog, and GSM networks at no additional cost. Because these plans have more coverage than other Cingular plans, the price of this plan is higher to cover Cingular’s higher costs.

- A4. The mobile wireless providers also offer regional plans to customers in the top 100 CMAs. Regional plans are geared toward subscribers who make and receive most of their calls from within the service area designated by the carrier for its regional plans. Table A summarizes and provides a comparison between the carriers’ most common national and regional plans. Carriers choose different pricing strategies to position their national and regional plans. For instance, Cingular offers 600 minutes for both plans, but charges \$49.99 for the national plan and \$39.99 for the regional plan.⁷⁸ Verizon Wireless also charges \$49.99 for its national plan and \$39.99 for its regional plan, but only offers 500 minutes. Sprint PCS charges \$45.00 for both plans while providing 500 minutes for the national plan and twice as many minutes for the regional plan. T-Mobile charges \$10 more for its regional plan than its national plan, but offers five times as many minutes for the increased price, although its plan differs in other features, such as free weekend minutes. At the time of my Internet price survey, at the \$39.99 price point, AWS offered the same number of minutes for both national and regional plans. There may be differences between AWS’s minutes for national and regional plans at higher or lower price points. Nextel has the same price and number of minutes for both packages, offering free long distance for its national plan but not its regional plan, while providing unlimited “walkie-talkie” time for its regional plan but not its national plan. ALLTEL, a regional carrier, offers more minutes at a lower price on its regional plan, as compared to its national plan. US Cellular, another regional carrier, charges a higher price than the national carriers for its national plan. MetroPCS

⁷⁸ These price/minute combinations are for Cingular’s standard, non-GAIT plans.

charges \$5 per month to add unlimited nationwide free long distance calls from the home calling area.

A5. Comparing price per minute, if the customer were to use all of the allotted minutes and not run over, US Cellular's national plan is the most expensive at 10.7 cents per minute, which is not surprising considering that a regional carrier offering national service is likely to incur higher costs. T-Mobile's regional plan is the least expensive for those who have high monthly usage but do not travel. The effective price is only 1.7 cents per minute for customers that use all 3,000 minutes. T-Mobile's plan is more expensive than other regional calling plans for customers that use only 500 minutes per month. The comparison is complicated further by other features that are not offered by all providers. For example, Cingular offers rollover of unused minutes from month to month. This reduces the effective price per minute for anyone who does not use the full bucket in one month but runs over the allotment in a later month. Carriers also differ in the availability and definition of free night and weekend minutes.

Table A: Most Common Monthly Price Plans by Carrier

Carrier	National			Regional		
	Price	Anytime Minutes	Price/Minute	Price	Anytime Minutes	Price/Minute
1 Cingular ¹	\$49.99	600	\$0.083	\$39.99	600	\$0.067
2 AT&T Wireless	\$39.99	600	\$0.067	\$39.99	600	\$0.067
3 T-Mobile USA	\$39.99	600	\$0.067	\$49.99	3000	\$0.017
4 Verizon Wireless	\$49.99	500	\$0.100	\$39.99	500	\$0.080
5 Sprint PCS	\$45.00	500	\$0.090	\$45.00	1000	\$0.045
6 Nextel ²	\$39.99	500	\$0.080	\$39.99	500	\$0.080
7 ALLTEL	\$45.00	600	\$0.075	\$39.95	1000	\$0.040
8 US Cellular	\$75.00	700	\$0.107	\$40.00	500	\$0.080
9 MetroPCS	\$40.00	Unlimited	N/A	\$35.00	Unlimited	N/A

¹ Cingular provides rollover of unused minutes for its national and regional plans.

² Nextel offers push to talk ("walkie-talkie") service as part of its plans.

A6. The mobile wireless carriers differ somewhat in their approaches to long distance and roaming charges in their regional plans,⁷⁹ but each carrier is consistent in its pricing of

⁷⁹ While subscribers to regional plans of the top six wireless carriers will not incur roaming charges within the established regional coverage areas, Cingular, AWS, and Sprint PCS regional plans also include nationwide long distance, provided that the subscriber is within the designated regional home service area. However, subscribers

the same plan across different areas of the country, with the few exceptions described here. Sprint PCS, Nextel, ALLTEL, T-Mobile and MetroPCS charge the same price for their regional plans in all of the top 100 CMAs they serve. Sprint PCS charges \$45.00 for 1,000 minutes; Nextel charges \$39.99 for 500 minutes; ALLTEL charges \$39.95 for 1,000 minutes; T-Mobile charges \$49.99 for 3,000 minutes; and MetroPCS charges \$35.00 for unlimited minutes. AWS charges \$39.99 for 600 minutes in every CMA except San Juan, PR, where it charges \$49.99.⁸⁰ Cingular charges \$39.99 for its regional plan in every CMA except the four requiring dual-mode GAIT phones. Cingular serves three of these CMAs (Tampa, FL, Birmingham, AL, and Lakeland, FL) with a \$49.99 plan and provides no regional plan in Mobile, AL. Cingular's "anytime" minutes for its regional plans vary from 500 to 600 minutes. The Cingular regional calling plan provides for 600 minutes in 59 of the CMAs, 550 minutes in 17 CMAs, and 500 minutes in 3 CMAs. There is no systematic relationship between the number of minutes offered and share concentration in these CMAs. Verizon Wireless charges \$39.99 for 500 minutes in most CMAs. Some CMAs near the Gulf of Mexico coast from Texas to Florida get 600 minutes for \$39.99. CMAs in the Northeast and Mid-Atlantic regions (former NYNEX and Bell Atlantic service territory, except for a few CMAs in Pennsylvania) have regional plans offering 700 minutes for \$59.99. US Cellular is offering a \$35.00 price for 500 minutes in Knoxville, TN, while they are offering service in 5 other CMAs for \$40.00, but with minutes varying from 500 to 700 minutes for these plans. MetroPCS offers unlimited usage on a prepaid basis with no contract and charges over \$100 for their cheapest phone. The service areas are limited to a greater metropolitan area; they are not statewide.

- A7. To further investigate the extent of price competition, I expanded my analysis to a group of RSAs that are much smaller than the top 100 CMAs. I examined 11 RSAs in which Cingular's and AWS's coverage overlap, 40 of the 500 smallest U.S. localities

to regional plans offered by Verizon Wireless and Nextel incur charges of 20 cents per minute for long distance. T-Mobile charges 20 cents per minute for calls made from within the regional coverage area to outside the region.

⁸⁰ SunCom, an AT&T affiliate, charges \$49.95 for unlimited anytime minutes in the four MSAs noted in the survey of national plans.

tracked by Telephia.⁸¹ This analysis includes Alltel and US Cellular (the two largest regional carriers), in addition to the six national carriers. Table A-2 in the Appendix shows the price data for each carrier for each of the 40 smallest “markets”, as determined by Telephia, and Table A-3 shows price data for each carrier for each of the 11 RSAs where Cingular and AWS have overlapping licenses.

- A8. Of the 40 smallest rural localities that I analyzed, shown on table A-2, I found very little variation in monthly price or allotted anytime minutes. Based on information from company websites, there are numerous rural localities in which three or fewer of the eight carriers are operating. In some of these localities one or more of the eight carriers holds spectrum but is not actively operating. With only a few exceptions, each of these RSAs had the same prices and allotted anytime minutes for national and regional calling plans as the top 100 CMAs, most of which support six or more competitors. Even when only one or two of the top eight carriers were present, they priced their services in the same manner as in the more competitive markets. In the national plans, the sole variation was a Cingular plan in Vicksburg, MS. For the regional plans, besides the Cingular plan in Vicksburg, MS, the only other variations were Cingular offering 550 minutes in Madisonville, KY, and US Cellular charging \$5 less in Fairmont, WV, than in other cities. My analysis of small rural areas showed little more price variation than my analysis of the top 100 CMAs.
- A9. Table A-3 shows that in each of the 11 RSAs where Cingular and AWS have overlapping licenses, the monthly plan prices and allotted anytime minutes for the wireless carriers show no variation between RSAs. All are priced the same as at the most common package for the top 100 CMAs for each carrier, with the exceptions of US Cellular, which offers the 500 minute regional plan for the lower \$35 price and Verizon Wireless offering 600 minutes for \$39.99. The variation of the 11 RSAs from the top 100 CMAs is no greater than the variation found within the top 100 CMAs, and all of the monthly plan prices and allotted anytime minute combinations found on Table A-3 can be found in the top 100 CMAs.

⁸¹ As listed in Telephia’s “Top 500 Markets” spreadsheet.

A10. My survey of websites for the national competitors in the top 100 CMAs looked at the plans that provided at least 500 “anytime” minutes of use and did not incorporate factors such as peak versus off-peak usage, long-distance or roaming charges. To consider these additional factors, I analyzed the price plan data available from Current Analysis.⁸² This database includes all of the price plans for the national carriers, and is regularly updated. The database enables calculation of the effective price based on the best available plan offered by each carrier given a user profile of location, minutes of usage, percent peak usage, percent roaming usage, and percent long distance usage. I constructed a user profile consisting of 500 minutes of use, 40% peak usage, 1% roaming usage (3% for regional plans), and 25% long distance usage. I then calculated the effective price, i.e. cost to the subscriber of this usage, for all of the 40 cities covered by the data. The effective price of “local” plans shows geographic variation only for Verizon Wireless and T-Mobile.⁸³ Analysis of “national” plans shows geographic variation in the effective price for Cingular in Tampa, FL, and Verizon Wireless but no variation for AWS or Sprint PCS.⁸⁴ Where there is variation in price, there is no apparent relationship between price and subscriber concentration. For example, Verizon Wireless’s national plan results in an effective price of \$38.44 in the 4 CMAs with the highest HHIs (based on subscriber shares in the local CMA), and \$43.44 in 11 of the 12 CMAs with the lowest HHIs. This exercise shows little or no variation in effective prices across different CMAs.

A11. Consumers often purchase a new handset when subscribing to a new service and subsidized pricing of handsets could be a source of geographic price variation. I surveyed the cost of the least expensive cell phone offered on the company website by each of the national mobile wireless providers in the top 100 metropolitan areas. The results are reported in Table B. Cingular, AWS, T-Mobile, and Sprint PCS all offered a free phone in every metropolitan area. Verizon Wireless’s lowest cost phone was \$9.99 in every metropolitan area. Nextel’s lowest cost phone was \$24.99, again in every metropolitan area.

⁸² Data provided by AWS.

⁸³ Current Analysis includes both local and regional plans in this category.

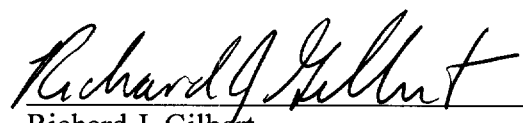
Table B: Lowest Equipment Prices Available on Company Websites

	Carrier	Price
1	Cingular	\$0.00
2	AT&T Wireless	\$0.00
3	T-Mobile USA	\$0.00
4	Verizon Wireless	\$9.99
5	Sprint PCS	\$0.00
6	Nextel	\$24.99

A12. In order to determine whether handset pricing contributes to geographic price variation I determined the average subsidy for 4 classes of handsets (Black and White, Color, Camera, and Specialty) in each of the CMAs covered by Current Analysis handset pricing data. While there is variation in the handset subsidy across CMAs, there is no apparent relationship to subscriber market shares or spectrum share at the CMA level. This is true whether the prices are for 2 year or 1 year contracts.

⁸⁴ I include both “on-net” and “anywhere” plans, and choose the least expensive for the usage profile.

I declare under penalty of perjury that the foregoing is true and correct.


Richard J. Gilbert

Executed on March 17, 2004

Table A-1 (National)
Lowest Price National Plan With At Least 500 Anytime Minutes by Carrier and CMA

Rank	CMA	CMA		Cingular		AT&T Wireless		T-Mobile		Verizon Wireless		Sprint PCS		Nextel	
		Sample Zip Code	Population# ('000)	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min
1	New York, NY	10001	16,330	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
2	Los Angeles, CA	90001	15,920	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
3	Chicago, IL	60601	8,232	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
4	Dallas, TX	75283	5,320	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
5	Philadelphia, PA	19101	5,067	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
6	Detroit, MI	48201	4,816	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
7	Houston, TX	77001	4,547	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
8	Boston, MA	02241	4,312	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
9	Washington, DC	20001	4,270	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
10	San Francisco, CA	94102	4,198	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
11	Miami, FL	33255	3,993	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
12	Atlanta, GA	30303	3,931	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
13	Phoenix, AZ	85003	3,233	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
14	Minneapolis, MN	55401	2,904	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
15	San Diego, CA	92155	2,858	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
16	Baltimore, MD	21201	2,541	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
17	St Louis, MO	63150	2,535	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
18	Denver, CO	80201	2,500	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
19	Seattle, WA	98145	2,406	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
20	Tampa, FL ¹	33663	2,317	\$55.00	500	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
21	San Juan, PR	00901	2,177	\$49.99	600	\$49.99	500	N/A	N/A	N/A	N/A	\$45.00	500	N/A	N/A
22	Pittsburgh, PA	15201	2,025	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
23	Cleveland, OH	44108	1,869	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
24	Portland, OR	97201	1,854	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
25	San Jose, CA	95101	1,714	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
26	Sacramento, CA	98529	1,689	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
27	Kansas City, MO	64119	1,658	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
28	San Antonio, TX	78201	1,604	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
29	Cincinnati, OH	45275	1,571	\$49.99	600	N/A	N/A	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
30	Milwaukee, WI	53202	1,512	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
31	Indianapolis, IN	46201	1,512	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
32	Orlando, FL	32801	1,496	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
33	Las Vegas, NV	89101	1,482	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
34	Columbus, OH	43085	1,425	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500

Table A-1 (National)
Lowest Price National Plan With At Least 500 Anytime Minutes by Carrier and CMA

Rank	CMA	CMA		Cingular		AT&T Wireless		T-Mobile		Verizon Wireless		Sprint PCS		Nextel	
		Sample Zip Code	Population# ('000)	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min
35	Salt Lake City, UT	84101	1,422	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
36	Nashville, TN	37201	1,273	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
37	Austin, TX	73301	1,224	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
38	New Orleans, LA	70112	1,206	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
39	West Palm Beach, FL	33415	1,177	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
40	Buffalo, NY	14201	1,167	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
41	Jacksonville, FL	32099	1,157	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
42	Hartford, CT	06155	1,153	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
43	Memphis, TN	37501	1,129	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
44	Greensboro, NC	27401	1,115	\$49.99	600	\$39.99	600	N/A	N/A	\$49.99	500	\$45.00	500	\$39.99	500
45	Oklahoma City, OK	73102	1,070	\$49.99	600	\$39.99	600	\$39.99	600	N/A	N/A	\$45.00	500	\$39.99	500
46	Norfolk, VA	23501	1,054	N/A	N/A	N/A	N/A	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
47	Charlotte, NC	28201	1,051	\$49.99	600	\$39.99	600	N/A	N/A	\$49.99	500	\$45.00	500	\$39.99	500
48	Rochester, NY	14602	1,044	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
49	Raleigh, NC	27601	1,017	\$49.99	600	\$39.99	600	N/A	N/A	\$49.99	500	\$45.00	500	\$39.99	500
50	Louisville, KY	40202	981	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
51	Providence, RI	02903	971	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
52	Birmingham, AL ¹	35201	953	\$55.00	500	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
53	Bridgeport, CT	06604	892	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
54	Honolulu, HI	96813	883	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
55	Tucson, AZ	85701	874	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
56	Tulsa, OK	74103	859	\$49.99	600	\$39.99	600	\$39.99	600	N/A	N/A	\$45.00	500	\$39.99	500
57	Dayton, OH	45401	849	\$49.99	600	N/A	N/A	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
58	Albany, NY	12202	846	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
59	Grand Rapids, MI	49503	834	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
60	New Haven, CT	06510	827	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
61	Fresno, CA	93650	822	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
62	Toledo, OH	43601	808	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
63	Oxnard, CA	93030	768	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
64	New Brunswick, NJ	08901	763	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
65	Greenville, SC	29601	762	\$49.99	600	N/A	N/A	N/A	N/A	\$49.99	500	\$45.00	500	\$39.99	500
66	Worcester, MA	01602	758	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
67	Allentown, PA	18101	750	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
68	Tacoma, WA	98402	721	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500

Table A-1 (National)
Lowest Price National Plan With At Least 500 Anytime Minutes by Carrier and CMA

Rank	CMA	CMA		Cingular		AT&T Wireless		T-Mobile		Verizon Wireless		Sprint PCS		Nextel	
		Sample Zip Code	Population# ('000)	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min
69	Akron, OH	44301	701	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
70	Richmond, VA	23219	698	N/A	N/A	N/A	N/A	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
71	El Paso, TX	79901	695	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
72	Omaha, NE	68102	686	N/A	N/A	\$39.99	600	N/A	N/A	\$49.99	500	\$45.00	500	\$39.99	500
73	Bakersfield, CA	93301	682	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
74	Northeast Pennsylvania, PA	18503	676	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
75	Albuquerque, NM	87101	664	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
76	Wilmington, DE	19801	663	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
77	Syracuse, NY	13202	648	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
78	Gary, IN	46402	636	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
79	Long Branch, NJ	07740	627	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
80	Baton Rouge, LA	70801	615	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
81	Springfield, MA	01103	610	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
82	McAllen, TX	78501	601	\$49.99	600	N/A	N/A	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
83	Little Rock, AR	72201	596	\$49.99	600	\$39.99	600	N/A	N/A	N/A	N/A	\$45.00	500	\$39.99	500
84	Knoxville, TN	37902	589	\$49.99	600	\$39.99	600	N/A	N/A	\$49.99	500	\$45.00	500	\$39.99	500
85	Stockton, CA	95202	578	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
86	Colorado Springs, CO	80903	559	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
87	Charleston, SC	29401	557	\$49.99	600	N/A	N/A	N/A	N/A	\$49.99	500	\$45.00	500	\$39.99	500
88	Columbia, SC	29201	552	\$49.99	600	N/A	N/A	N/A	N/A	\$49.99	500	\$45.00	500	\$39.99	500
89	Mobile, AL ¹	36602	551	\$55.00	500	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
90	New Bedford, MA	02740	539	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
91	Citrus, FL	34433	536	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
92	Vallejo, CA	94589	531	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
93	Ocean, NJ	07712	524	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
94	Wichita, KS	67202	522	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
95	Harrisburg, PA	17101	515	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
96	Lansing, MI	48906	513	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
97	Flint, MI	48502	509	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
98	Newport News, VA	23601	499	N/A	N/A	N/A	N/A	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
99	Lakeland, FL ¹	33801	497	\$55.00	500	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
100	Cabarrus, NC	28107	493	\$49.99	600	\$39.99	600	N/A	N/A	\$49.99	500	\$45.00	500	\$39.99	500

Table A-1 (National)
Lowest Price National Plan With At Least 500 Anytime Minutes by Carrier and CMA

CMA															
	Sample	Population [#]	Cingular		AT&T Wireless		T-Mobile		Verizon Wireless		Sprint PCS		Nextel		
Rank	CMA	Zip Code	('000)	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min
Summary Statistics															
	Count		100	80	80	91	91	89	89	96	96	100	100	99	99
	Mode		-	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
	Min		493	\$49.99	500	\$39.99	500	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
	Max		16,330	\$55.00	600	\$49.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
	Median		976	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
	Mean		1,778	\$50.24	595	\$40.10	599	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
Are all packages the same?				No		No		Yes		Yes		Yes		Yes	

[#] 2002 CMA populations.

N/A = Carrier does not offer service.

¹ Cingular MSA where dual mode GAIT phone is required.

Table A-1 (National)
Lowest Price National Plan With At Least 500 Anytime Minutes by Carrier and CMA

Rank	CMA	CMA		ALLTEL		US Cellular		MetroPCS		AT&T Wireless		Carriers
		Sample Zip Code	Population# ('000)	Rate	Min	Rate	Min	Rate	Min	Rate	Min	
1	New York, NY	10001	16,330	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
2	Los Angeles, CA	90001	15,920	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
3	Chicago, IL	60601	8,232	N/A	N/A	\$75.00	700	N/A	N/A	N/A	N/A	7
4	Dallas, TX	75283	5,320	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
5	Philadelphia, PA	19101	5,067	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
6	Detroit, MI	48201	4,816	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
7	Houston, TX	77001	4,547	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
8	Boston, MA	02241	4,312	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
9	Washington, DC	20001	4,270	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
10	San Francisco, CA	94102	4,198	N/A	N/A	N/A	N/A	\$40.00	Unlimited	N/A	N/A	7
11	Miami, FL	33255	3,993	N/A	N/A	N/A	N/A	\$40.00	Unlimited	N/A	N/A	7
12	Atlanta, GA	30303	3,931	N/A	N/A	N/A	N/A	\$40.00	Unlimited	N/A	N/A	7
13	Phoenix, AZ	85003	3,233	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	6
14	Minneapolis, MN	55401	2,904	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
15	San Diego, CA	92155	2,858	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
16	Baltimore, MD	21201	2,541	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
17	St Louis, MO	63150	2,535	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
18	Denver, CO	80201	2,500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
19	Seattle, WA	98145	2,406	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
20	Tampa, FL ¹	33663	2,317	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	7
21	San Juan, PR	00901	2,177	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3
22	Pittsburgh, PA	15201	2,025	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
23	Cleveland, OH	44108	1,869	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	7
24	Portland, OR	97201	1,854	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
25	San Jose, CA	95101	1,714	N/A	N/A	N/A	N/A	\$40.00	Unlimited	N/A	N/A	7
26	Sacramento, CA	98529	1,689	N/A	N/A	N/A	N/A	\$40.00	Unlimited	N/A	N/A	7
27	Kansas City, MO	64119	1,658	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
28	San Antonio, TX	78201	1,604	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
29	Cincinnati, OH	45275	1,571	N/A	N/A	N/A	N/A	N/A	N/A	\$69.99	500	6
30	Milwaukee, WI	53202	1,512	N/A	N/A	\$75.00	700	N/A	N/A	N/A	N/A	7
31	Indianapolis, IN	46201	1,512	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
32	Orlando, FL	32801	1,496	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
33	Las Vegas, NV	89101	1,482	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
34	Columbus, OH	43085	1,425	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6

Table A-1 (National)
Lowest Price National Plan With At Least 500 Anytime Minutes by Carrier and CMA

Rank	CMA	CMA		ALLTEL		US Cellular		MetroPCS		AT&T Wireless		Carriers
		Sample Zip Code	Population# ('000)	Rate	Min	Rate	Min	Rate	Min	Rate	Min	
35	Salt Lake City, UT	84101	1,422	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
36	Nashville, TN	37201	1,273	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
37	Austin, TX	73301	1,224	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
38	New Orleans, LA	70112	1,206	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	7
39	West Palm Beach, FL	33415	1,177	N/A	N/A	N/A	N/A	\$40.00	Unlimited	N/A	N/A	7
40	Buffalo, NY	14201	1,167	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
41	Jacksonville, FL	32099	1,157	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	7
42	Hartford, CT	06155	1,153	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
43	Memphis, TN	37501	1,129	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
44	Greensboro, NC	27401	1,115	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	6
45	Oklahoma City, OK	73102	1,070	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
46	Norfolk, VA	23501	1,054	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	5
47	Charlotte, NC	28201	1,051	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	6
48	Rochester, NY	14602	1,044	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
49	Raleigh, NC	27601	1,017	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	6
50	Louisville, KY	40202	981	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
51	Providence, RI	02903	971	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
52	Birmingham, AL ¹	35201	953	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
53	Bridgeport, CT	06604	892	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
54	Honolulu, HI	96813	883	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
55	Tucson, AZ	85701	874	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	6
56	Tulsa, OK	74103	859	N/A	N/A	\$75.00	700	N/A	N/A	N/A	N/A	6
57	Dayton, OH	45401	849	N/A	N/A	N/A	N/A	N/A	N/A	\$69.99	500	6
58	Albany, NY	12202	846	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
59	Grand Rapids, MI	49503	834	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	6
60	New Haven, CT	06510	827	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
61	Fresno, CA	93650	822	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
62	Toledo, OH	43601	808	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	6
63	Oxnard, CA	93030	768	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
64	New Brunswick, NJ	08901	763	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
65	Greenville, SC	29601	762	\$45.00	600	N/A	N/A	N/A	N/A	\$99.95	550	6
66	Worcester, MA	01602	758	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
67	Allentown, PA	18101	750	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
68	Tacoma, WA	98402	721	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6

Table A-1 (National)
Lowest Price National Plan With At Least 500 Anytime Minutes by Carrier and CMA

Rank	CMA	CMA		ALLTEL		US Cellular		MetroPCS		AT&T Wireless		Carriers
		Sample Zip Code	Population# ('000)	Rate	Min	Rate	Min	Rate	Min	Rate	Min	
69	Akron, OH	44301	701	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	7
70	Richmond, VA	23219	698	\$45.00	600	N/A	N/A	N/A	N/A	\$99.95	550	6
71	El Paso, TX	79901	695	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	6
72	Omaha, NE	68102	686	\$45.00	600	\$75.00	700	N/A	N/A	N/A	N/A	6
73	Bakersfield, CA	93301	682	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
74	Northeast Pennsylvania, PA	18503	676	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
75	Albuquerque, NM	87101	664	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	6
76	Wilmington, DE	19801	663	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
77	Syracuse, NY	13202	648	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
78	Gary, IN	46402	636	N/A	N/A	\$75.00	700	N/A	N/A	N/A	N/A	7
79	Long Branch, NJ	07740	627	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
80	Baton Rouge, LA	70801	615	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	7
81	Springfield, MA	01103	610	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
82	McAllen, TX	78501	601	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
83	Little Rock, AR	72201	596	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	5
84	Knoxville, TN	37902	589	\$45.00	600	\$75.00	700	N/A	N/A	N/A	N/A	7
85	Stockton, CA	95202	578	N/A	N/A	N/A	N/A	\$40.00	Unlimited	N/A	N/A	7
86	Colorado Springs, CO	80903	559	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
87	Charleston, SC	29401	557	\$45.00	600	N/A	N/A	N/A	N/A	\$99.95	550	6
88	Columbia, SC	29201	552	\$45.00	600	N/A	N/A	N/A	N/A	\$99.95	550	6
89	Mobile, AL ¹	36602	551	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	7
90	New Bedford, MA	02740	539	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
91	Citrus, FL	34433	536	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	6
92	Vallejo, CA	94589	531	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
93	Ocean, NJ	07712	524	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
94	Wichita, KS	67202	522	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	7
95	Harrisburg, PA	17101	515	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
96	Lansing, MI	48906	513	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	6
97	Flint, MI	48502	509	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
98	Newport News, VA	23601	499	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	5
99	Lakeland, FL ¹	33801	497	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	7
100	Cabarrus, NC	28107	493	\$45.00	600	N/A	N/A	N/A	N/A	N/A	N/A	6

Table A-1 (National)
Lowest Price National Plan With At Least 500 Anytime Minutes by Carrier and CMA

		CMA								AT&T Wireless		
	Sample	Population [#]	ALLTEL		US Cellular		MetroPCS		Affiliate			
Rank	CMA	Zip Code	('000)	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Carrier
Summary Statistics												
	Count		100	30	30	6	6	7	7	6	6	100
	Mode		-	\$45.00	600	\$75.00	700	\$40.00	Unlimited	\$99.95	550	6
	Min		493	\$45.00	600	\$75.00	700	\$40.00	N/A	\$69.99	500	3
	Max		16,330	\$45.00	600	\$75.00	700	\$40.00	N/A	\$99.95	550	7
	Median		976	\$45.00	600	\$75.00	700	\$40.00	N/A	\$99.95	550	6
	Mean		1,778	\$45.00	600	\$75.00	700	\$40.00	N/A	\$89.96	533	6
Are all packages the same?				Yes		Yes		Yes		No		

[#] 2002 CMA populations.

N/A = Carrier does not offer service.

¹ Cingular MSA where dual mode GAIT phone is required.

Table A-1 (Regional)
Lowest Price Local/Regional Plan With At Least 500 Anytime Minutes by Carrier and CMA

Rank	CMA	CMA		Cingular		AT&T Wireless		T-Mobile		Verizon Wireless		Sprint PCS		Nextel	
		Sample Zip Code	Population# ('000)	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min
1	New York, NY ²	10001	16,330	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
2	Los Angeles, CA	90001	15,920	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
3	Chicago, IL	60601	8,232	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
4	Dallas, TX	75283	5,320	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
5	Philadelphia, PA ²	19101	5,067	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
6	Detroit, MI	48201	4,816	\$39.99	550	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
7	Houston, TX	77001	4,547	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
8	Boston, MA ²	02241	4,312	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
9	Washington, DC ²	20001	4,270	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
10	San Francisco, CA	94102	4,198	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
11	Miami, FL	33255	3,993	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
12	Atlanta, GA	30303	3,931	\$39.99	550	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
13	Phoenix, AZ	85003	3,233	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
14	Minneapolis, MN	55401	2,904	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
15	San Diego, CA	92155	2,858	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
16	Baltimore, MD ²	21201	2,541	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
17	St Louis, MO	63150	2,535	\$39.99	500	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
18	Denver, CO	80201	2,500	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
19	Seattle, WA	98145	2,406	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
20	Tampa, FL ¹	33663	2,317	\$49.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
21	San Juan, PR	00901	2,177	\$39.99	550	\$49.99	600	N/A	N/A	N/A	N/A	\$45.00	1000	N/A	N/A
22	Pittsburgh, PA	15201	2,025	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
23	Cleveland, OH	44108	1,869	\$39.99	550	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
24	Portland, OR	97201	1,854	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
25	San Jose, CA	95101	1,714	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
26	Sacramento, CA	98529	1,689	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
27	Kansas City, MO	64119	1,658	\$39.99	500	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
28	San Antonio, TX	78201	1,604	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
29	Cincinnati, OH	45275	1,571	\$39.99	550	N/A	N/A	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
30	Milwaukee, WI	53202	1,512	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
31	Indianapolis, IN	46201	1,512	\$39.99	550	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
32	Orlando, FL	32801	1,496	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
33	Las Vegas, NV	89101	1,482	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
34	Columbus, OH	43085	1,425	\$39.99	550	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500

Table A-1 (Regional)
Lowest Price Local/Regional Plan With At Least 500 Anytime Minutes by Carrier and CMA

Rank	CMA	CMA		Cingular		AT&T Wireless		T-Mobile		Verizon Wireless		Sprint PCS		Nextel	
		Sample Zip Code	Population# ('000)	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min
35	Salt Lake City, UT	84101	1,422	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
36	Nashville, TN	37201	1,273	\$39.99	550	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
37	Austin, TX	73301	1,224	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
38	New Orleans, LA	70112	1,206	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
39	West Palm Beach, FL	33415	1,177	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
40	Buffalo, NY ²	14201	1,167	\$39.99	550	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
41	Jacksonville, FL	32099	1,157	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
42	Hartford, CT ²	06155	1,153	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
43	Memphis, TN	37501	1,129	\$39.99	550	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
44	Greensboro, NC	27401	1,115	\$39.99	600	\$39.99	600	N/A	N/A	\$39.99	500	\$45.00	1000	\$39.99	500
45	Oklahoma City, OK	73102	1,070	\$39.99	600	\$39.99	600	\$49.99	3000	N/A	N/A	\$45.00	1000	\$39.99	500
46	Norfolk, VA ²	23501	1,054	N/A	N/A	N/A	N/A	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
47	Charlotte, NC	28201	1,051	\$39.99	600	\$39.99	600	N/A	N/A	\$39.99	500	\$45.00	1000	\$39.99	500
48	Rochester, NY ²	14602	1,044	\$39.99	550	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
49	Raleigh, NC	27601	1,017	\$39.99	600	\$39.99	600	N/A	N/A	\$39.99	500	\$45.00	1000	\$39.99	500
50	Louisville, KY	40202	981	\$39.99	550	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
51	Providence, RI ²	02903	971	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
52	Birmingham, AL ¹	35201	953	\$49.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
53	Bridgeport, CT ²	06604	892	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
54	Honolulu, HI	96813	883	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
55	Tucson, AZ	85701	874	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
56	Tulsa, OK	74103	859	\$39.99	600	\$39.99	600	\$49.99	3000	N/A	N/A	\$45.00	1000	\$39.99	500
57	Dayton, OH	45401	849	\$39.99	550	N/A	N/A	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
58	Albany, NY ²	12202	846	\$39.99	550	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
59	Grand Rapids, MI	49503	834	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
60	New Haven, CT ²	06510	827	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
61	Fresno, CA	93650	822	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	N/A	N/A	\$39.99	500
62	Toledo, OH	43601	808	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
63	Oxnard, CA	93030	768	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	N/A	N/A	\$39.99	500
64	New Brunswick, NJ ²	08901	763	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
65	Greenville, SC	29601	762	\$39.99	600	N/A	N/A	N/A	N/A	\$39.99	500	N/A	N/A	\$39.99	500
66	Worcester, MA ²	01602	758	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
67	Allentown, PA ²	18101	750	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
68	Tacoma, WA	98402	721	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500

Table A-1 (Regional)
Lowest Price Local/Regional Plan With At Least 500 Anytime Minutes by Carrier and CMA

Rank	CMA	CMA		Cingular		AT&T Wireless		T-Mobile		Verizon Wireless		Sprint PCS		Nextel	
		Sample Zip Code	Population# ('000)	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min
69	Akron, OH	44301	701	\$39.99	550	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
70	Richmond, VA ²	23219	698	N/A	N/A	N/A	N/A	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
71	El Paso, TX	79901	695	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
72	Omaha, NE	68102	686	N/A	N/A	\$39.99	600	N/A	N/A	\$39.99	500	\$45.00	1000	\$39.99	500
73	Bakersfield, CA	93301	682	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	N/A	N/A	\$39.99	500
74	Northeast Pennsylvania, PA	18503	676	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	N/A	N/A	\$39.99	500
75	Albuquerque, NM	87101	664	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
76	Wilmington, DE ²	19801	663	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
77	Syracuse, NY ²	13202	648	\$39.99	550	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
78	Gary, IN	46402	636	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
79	Long Branch, NJ ²	07740	627	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
80	Baton Rouge, LA	70801	615	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
81	Springfield, MA ²	01103	610	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
82	McAllen, TX	78501	601	\$39.99	600	N/A	N/A	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
83	Little Rock, AR	72201	596	\$39.99	600	\$39.99	600	N/A	N/A	N/A	N/A	\$45.00	1000	\$39.99	500
84	Knoxville, TN	37902	589	\$39.99	600	\$39.99	600	N/A	N/A	\$39.99	500	\$45.00	1000	\$39.99	500
85	Stockton, CA	95202	578	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	N/A	N/A	\$39.99	500
86	Colorado Springs, CO	80903	559	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
87	Charleston, SC	29401	557	\$39.99	600	N/A	N/A	N/A	N/A	\$39.99	500	N/A	N/A	\$39.99	500
88	Columbia, SC	29201	552	\$39.99	600	N/A	N/A	N/A	N/A	\$39.99	500	N/A	N/A	\$39.99	500
89	Mobile, AL	36602	551	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
90	New Bedford, MA ²	02740	539	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
91	Citrus, FL	34433	536	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
92	Vallejo, CA	94589	531	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
93	Ocean, NJ ²	07712	524	\$39.99	600	\$39.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
94	Wichita, KS	67202	522	\$39.99	500	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
95	Harrisburg, PA	17101	515	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
96	Lansing, MI	48906	513	N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
97	Flint, MI	48502	509	\$39.99	550	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
98	Newport News, VA ²	23601	499	N/A	N/A	N/A	N/A	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
99	Lakeland, FL ¹	33801	497	\$49.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
100	Cabarrus, NC	28107	493	\$39.99	600	\$39.99	600	N/A	N/A	\$39.99	500	\$45.00	1000	\$39.99	500

Table A-1 (Regional)
Lowest Price Local/Regional Plan With At Least 500 Anytime Minutes by Carrier and CMA

CMA															
	Sample	Population [#]	Cingular		AT&T Wireless		T-Mobile		Verizon Wireless		Sprint PCS		Nextel		
Rank	CMA	Zip Code	(⁰⁰⁰)	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min
Summary Statistics															
	Count		100	79	79	91	91	89	89	96	96	92	92	99	99
	Mode		-	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
	Min		493	\$39.99	500	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
	Max		16,330	\$49.99	600	\$49.99	600	\$49.99	3000	\$59.99	700	\$45.00	1000	\$39.99	500
	Median		976	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
	Mean		1,778	\$40.37	585	\$40.10	600	\$49.99	3000	\$44.99	566	\$45.00	1000	\$39.99	500
Are all packages the same?				No		No		Yes		No		Yes		Yes	

[#] 2002 CMA populations.

N/A = Carrier does not offer service.

¹ Cingular MSA where dual mode GAIT phone is required.

² Note that all CMAs with a higher price (and more minutes) for Verizon are within Verizon's wireline territory (NYNEX and Bell Atlantic).

Table A-1 (Regional)
Lowest Price Local/Regional Plan With At Least 500 Anytime Minutes by Carrier and CMA

Rank	CMA	Sample Zip Code	CMA Population# ('000)	ALLTEL		US Cellular		MetroPCS		AT&T Wireless Affiliate		Carriers
				Rate	Min	Rate	Min	Rate	Min	Rate	Min	
1	New York, NY ²	10001	16,330	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
2	Los Angeles, CA	90001	15,920	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
3	Chicago, IL	60601	8,232	N/A	N/A	\$40.00	700	N/A	N/A	N/A	N/A	7
4	Dallas, TX	75283	5,320	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
5	Philadelphia, PA ²	19101	5,067	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
6	Detroit, MI	48201	4,816	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
7	Houston, TX	77001	4,547	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
8	Boston, MA ²	02241	4,312	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
9	Washington, DC ²	20001	4,270	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
10	San Francisco, CA	94102	4,198	N/A	N/A	N/A	N/A	\$35.00	Unlimited	N/A	N/A	7
11	Miami, FL	33255	3,993	N/A	N/A	N/A	N/A	\$35.00	Unlimited	N/A	N/A	7
12	Atlanta, GA	30303	3,931	N/A	N/A	N/A	N/A	\$35.00	Unlimited	N/A	N/A	7
13	Phoenix, AZ	85003	3,233	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	6
14	Minneapolis, MN	55401	2,904	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
15	San Diego, CA	92155	2,858	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
16	Baltimore, MD ²	21201	2,541	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
17	St Louis, MO	63150	2,535	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
18	Denver, CO	80201	2,500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
19	Seattle, WA	98145	2,406	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
20	Tampa, FL ¹	33663	2,317	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	7
21	San Juan, PR	00901	2,177	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3
22	Pittsburgh, PA	15201	2,025	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
23	Cleveland, OH	44108	1,869	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	7
24	Portland, OR	97201	1,854	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
25	San Jose, CA	95101	1,714	N/A	N/A	N/A	N/A	\$35.00	Unlimited	N/A	N/A	7
26	Sacramento, CA	98529	1,689	N/A	N/A	N/A	N/A	\$35.00	Unlimited	N/A	N/A	7
27	Kansas City, MO	64119	1,658	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
28	San Antonio, TX	78201	1,604	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
29	Cincinnati, OH	45275	1,571	N/A	N/A	N/A	N/A	N/A	N/A	\$44.99	500	6
30	Milwaukee, WI	53202	1,512	N/A	N/A	\$40.00	500	N/A	N/A	N/A	N/A	7
31	Indianapolis, IN	46201	1,512	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
32	Orlando, FL	32801	1,496	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
33	Las Vegas, NV	89101	1,482	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
34	Columbus, OH	43085	1,425	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6

Table A-1 (Regional)
Lowest Price Local/Regional Plan With At Least 500 Anytime Minutes by Carrier and CMA

Rank	CMA	CMA		ALLTEL		US Cellular		MetroPCS		AT&T Wireless		Carriers
		Sample Zip Code	Population# ('000)	Rate	Min	Rate	Min	Rate	Min	Rate	Min	
35	Salt Lake City, UT	84101	1,422	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
36	Nashville, TN	37201	1,273	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
37	Austin, TX	73301	1,224	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
38	New Orleans, LA	70112	1,206	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	7
39	West Palm Beach, FL	33415	1,177	N/A	N/A	N/A	N/A	\$35.00	Unlimited	N/A	N/A	7
40	Buffalo, NY ²	14201	1,167	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
41	Jacksonville, FL	32099	1,157	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	7
42	Hartford, CT ²	06155	1,153	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
43	Memphis, TN	37501	1,129	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
44	Greensboro, NC	27401	1,115	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	6
45	Oklahoma City, OK	73102	1,070	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
46	Norfolk, VA ²	23501	1,054	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	5
47	Charlotte, NC	28201	1,051	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	6
48	Rochester, NY ²	14602	1,044	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
49	Raleigh, NC	27601	1,017	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	6
50	Louisville, KY	40202	981	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
51	Providence, RI ²	02903	971	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
52	Birmingham, AL ¹	35201	953	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
53	Bridgeport, CT ²	06604	892	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
54	Honolulu, HI	96813	883	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
55	Tucson, AZ	85701	874	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	6
56	Tulsa, OK	74103	859	N/A	N/A	\$40.00	500	N/A	N/A	N/A	N/A	6
57	Dayton, OH	45401	849	N/A	N/A	N/A	N/A	N/A	N/A	\$44.99	500	6
58	Albany, NY ²	12202	846	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
59	Grand Rapids, MI	49503	834	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	6
60	New Haven, CT ²	06510	827	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
61	Fresno, CA	93650	822	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
62	Toledo, OH	43601	808	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	6
63	Oxnard, CA	93030	768	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
64	New Brunswick, NJ ²	08901	763	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
65	Greenville, SC	29601	762	\$39.95	1000	N/A	N/A	N/A	N/A	\$49.95	Unlimited	5
66	Worcester, MA ²	01602	758	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
67	Allentown, PA ²	18101	750	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
68	Tacoma, WA	98402	721	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6

Table A-1 (Regional)
Lowest Price Local/Regional Plan With At Least 500 Anytime Minutes by Carrier and CMA

Rank	CMA	CMA		ALLTEL		US Cellular		MetroPCS		AT&T Wireless		Carriers
		Sample Zip Code	Population# ('000)	Rate	Min	Rate	Min	Rate	Min	Rate	Min	
69	Akron, OH	44301	701	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	7
70	Richmond, VA ²	23219	698	\$39.95	1000	N/A	N/A	N/A	N/A	\$49.95	Unlimited	6
71	El Paso, TX	79901	695	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	6
72	Omaha, NE	68102	686	\$39.95	1000	\$40.00	500	N/A	N/A	N/A	N/A	6
73	Bakersfield, CA	93301	682	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
74	Northeast Pennsylvania, PA	18503	676	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4
75	Albuquerque, NM	87101	664	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	6
76	Wilmington, DE ²	19801	663	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
77	Syracuse, NY ²	13202	648	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
78	Gary, IN	46402	636	N/A	N/A	\$40.00	700	N/A	N/A	N/A	N/A	7
79	Long Branch, NJ ²	07740	627	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
80	Baton Rouge, LA	70801	615	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	7
81	Springfield, MA ²	01103	610	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
82	McAllen, TX	78501	601	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
83	Little Rock, AR	72201	596	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	5
84	Knoxville, TN	37902	589	\$39.95	1000	\$35.00	500	N/A	N/A	N/A	N/A	7
85	Stockton, CA	95202	578	N/A	N/A	N/A	N/A	\$35.00	Unlimited	N/A	N/A	6
86	Colorado Springs, CO	80903	559	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
87	Charleston, SC	29401	557	\$39.95	1000	N/A	N/A	N/A	N/A	\$49.95	Unlimited	5
88	Columbia, SC	29201	552	\$39.95	1000	N/A	N/A	N/A	N/A	\$49.95	Unlimited	5
89	Mobile, AL	36602	551	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	6
90	New Bedford, MA ²	02740	539	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
91	Citrus, FL	34433	536	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	6
92	Vallejo, CA	94589	531	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
93	Ocean, NJ ²	07712	524	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
94	Wichita, KS	67202	522	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	7
95	Harrisburg, PA	17101	515	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
96	Lansing, MI	48906	513	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	6
97	Flint, MI	48502	509	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
98	Newport News, VA ²	23601	499	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	5
99	Lakeland, FL ¹	33801	497	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	7
100	Cabarrus, NC	28107	493	\$39.95	1000	N/A	N/A	N/A	N/A	N/A	N/A	6

Table A-1 (Regional)
Lowest Price Local/Regional Plan With At Least 500 Anytime Minutes by Carrier and CMA

		CMA								AT&T Wireless		
		Sample	Population [#]	ALLTEL		US Cellular		MetroPCS		Affiliate		
Rank	CMA	Zip Code	('000)	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Carriers
Summary Statistics												
	Count		100	30	30	6	6	7	7	6	6	100
	Mode		-	\$39.95	1000	\$40.00	500	\$35.00	Unlimited	\$49.95	500	6
	Min		493	\$39.95	1000	\$35.00	500	\$35.00	N/A	\$44.99	500	3
	Max		16,330	\$39.95	1000	\$40.00	700	\$35.00	N/A	\$49.95	500	7
	Median		976	\$39.95	1000	\$40.00	500	\$35.00	N/A	\$49.95	500	6
	Mean		1,778	\$39.95	1000	\$39.17	567	\$35.00	N/A	\$48.30	500	6
Are all packages the same?				Yes		No		Yes		No		

[#] 2002 CMA populations.

N/A = Carrier does not offer service.

¹ Cingular MSA where dual mode GAIT phone is required.

² Note that all CMAs with a higher price (and more minutes) for Verizon are within Verizon's wireline territory (NYNEX and Bell Atlantic).

Table A-2 (National)
Lowest Price National Plan With At Least 500 Anytime Minutes by Carrier and BTA

		BTA		Population [#] (⁰⁰⁰)	Sample Zip Code	RSA	Cingular		AT&T Wireless		T-Mobile		Verizon Wireless		Sprint PCS		Nextel	
Rank	BTA	State	Rate				Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate
40 Smallest Telephia BTAs																		
1	Williston	ND	25	58801	North Dakota 1 - Divide	N/A	N/A	N/A	N/A	N/A	N/A	\$49.99	500	N/A	N/A	N/A	N/A	
2	Ironwood	MI	31	49938	Michigan 1 - Gogebic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
3	McCook	NE	33	69001	Nebraska 8 - Chase	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4	Dickinson	ND	36	58601	North Dakota 4 - McKenzie	N/A	N/A	N/A	N/A	N/A	N/A	\$49.99	500	N/A	N/A	N/A	N/A	
5	Big Spring	TX	36	79720	Texas 8 - Gaines	N/A	N/A	N/A	N/A	*	*	N/A	N/A	\$45.00	500	\$39.99	500	
6	Logan	WV	37	25601	West Virginia 6 - Lincoln	N/A	N/A	\$39.99	600	N/A	N/A	N/A	N/A	\$45.00	500	N/A	N/A	
7	Great Bend	KS	39	67530	Kansas 7 - Trego	N/A	N/A	N/A	N/A	*	*	N/A	N/A	N/A	N/A	N/A	N/A	
8	Nogales	AZ	39	85621	Arizona 6 - Graham	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500	
9	Escanaba	MI	41	49829	Michigan 2 - Alger	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10	Dodge City	KS	43	67801	Kansas 12 - Hodgeman	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
11	Iron Mountain	MI	46	49801	Michigan 1 - Gogebic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
12	Madisonville	KY	46	42431	Kentucky 2 - Union	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500	
13	Houghton	MI	47	49921	Michigan 1 - Gogebic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
14	Emporia	KS	48	66801	Kansas 9 - Morris	N/A	N/A	\$39.99	600	\$39.99	600	N/A	N/A	\$45.00	500	\$39.99	500	
15	Bartlesville	OK	49	74003	Oklahoma 4 - Nowata	\$49.99	600	\$39.99	600	\$39.99	600	N/A	N/A	\$45.00	500	N/A	N/A	
16	Riverton	WY	49	82501	Wyoming 3 - Lincoln	N/A	N/A	N/A	N/A	N/A	N/A	\$49.99	500	N/A	N/A	N/A	N/A	
17	Ponca City	OK	50	74601	Oklahoma 3 - Grant	\$49.99	600	\$39.99	600	\$39.99	600	N/A	N/A	\$45.00	500	N/A	N/A	
18	Sault Ste. Marie	MI	51	49783	Michigan 2 - Alger	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
19	Carlsbad	NM	52	88220	New Mexico 6 - Lincoln	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$45.00	500	N/A	N/A	
20	Lihue	HI	52	96766	Hawaii 1 - Kauai	N/A	N/A	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500	
21	Ada	OK	54	74820	Oklahoma 9 - Garvin	\$49.99	600	N/A	N/A	*	*	N/A	N/A	\$45.00	500	N/A	N/A	
22	Huron	SD	55	57350	South Dakota 8 - Kingsbury	N/A	N/A	N/A	N/A	N/A	N/A	\$49.99	500	N/A	N/A	N/A	N/A	
23	Hobbs	NM	55	88240	New Mexico 6 - Lincoln	N/A	N/A	N/A	N/A	\$39.99	600	N/A	N/A	\$45.00	500	N/A	N/A	
24	McAlester	OK	56	74501	Oklahoma 6 - Seminole	\$49.99	600	N/A	N/A	\$39.99	600	N/A	N/A	\$45.00	500	N/A	N/A	
25	Fairmont	WV	57	26554	West Virginia 3 - Monongalia	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$45.00	500	\$39.99	500	
26	Kirksville	MO	57	63501	Missouri 3 - Schuyler	N/A	N/A	N/A	N/A	*	*	N/A	N/A	\$45.00	500	N/A	N/A	
27	Marshalltown	IA	58	50158	Iowa 11 - Hardin	N/A	N/A	\$39.99	600	N/A	N/A	N/A	N/A	\$45.00	500	\$39.99	500	
28	Rock Springs	WY	59	82901	Wyoming 3 - Lincoln	N/A	N/A	N/A	N/A	N/A	N/A	\$49.99	500	N/A	N/A	N/A	N/A	
29	Hays	KS	60	67601	Kansas 7 - Trego	N/A	N/A	N/A	N/A	*	*	N/A	N/A	N/A	N/A	N/A	N/A	
30	Coffeyville	KS	61	67337	Kansas 15 - Elk	\$49.99	600	N/A	N/A	*	*	N/A	N/A	N/A	N/A	N/A	N/A	
31	Brownwood	TX	62	76801	Texas 9 - Runnels	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
32	Liberal	KS	63	67901	Kansas 11 - Hamilton	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
33	Vicksburg	MS	64	39180	Mississippi 5 - Washington	\$55.00	500	\$39.99	600	\$39.99	600	N/A	N/A	\$45.00	500	\$39.99	500	
34	Mattoon	IL	65	61938	Illinois 7 - Vermilion	N/A	N/A	N/A	N/A	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500	
35	Alpena	MI	65	49707	Michigan 4 - Cheboygan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
36	Marquette	MI	66	49855	Michigan 1 - Gogebic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
37	Marinette	WI	67	54134	Wisconsin 4 - Marinette	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$39.99	500	
38	Bemidji	MN	67	56601	Minnesota 2 - Lake of the Wood	N/A	N/A	N/A	N/A	*	*	N/A	N/A	\$45.00	500	N/A	N/A	
39	Butte	MT	67	59701	Montana 6 - Deer Lodge	N/A	N/A	N/A	N/A	\$39.99	600	\$49.99	500	N/A	N/A	N/A	N/A	
40	Blytheville	AR	67	72315	Arkansas 4 - Clay	\$49.99	600	\$39.99	600	N/A	N/A	N/A	N/A	\$45.00	500	N/A	N/A	

Table A-2 (National)
Lowest Price National Plan With At Least 500 Anytime Minutes by Carrier and BTA

Rank	BTA	State	BTA Population # (‘000)	Sample Zip Code	RSA	Cingular Rate	Cingular Min	AT&T Wireless Rate	AT&T Wireless Min	T-Mobile Rate	T-Mobile Min	Verizon Wireless Rate	Verizon Wireless Min	Sprint PCS Rate	Sprint PCS Min	Nextel Rate	Nextel Min
Summary Statistics																	
	Count		40	-	-	8	8	10	10	11	11	10	10	19	19	10	10
	Mode		-	-	-	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
	Min		25	-	-	\$49.99	500	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
	Max		67	-	-	\$55.00	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
	Median		53	-	-	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
	Mean		52	-	-	\$50.62	588	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
Are all packages the same?						No		Yes		Yes		Yes		Yes		Yes	

2002 BTA populations.

N/A = Carrier does not offer service.

* = Could not confirm carrier coverage.

Note: Data is based on the smallest BTAs included in Telephia report.
There are instances where there are multiple BTAs in a given RSA.

Table A-2 (National)
Lowest Price National Plan With At Least 500 Anytime Minutes by Carrier and BTA

BTA					ALLTEL		US Cellular		Carriers	
Rank	BTA	State	Population [#] ('000)	Sample Zip Code	RSA	Rate	Min	Rate		Min
40 Smallest Telephia BTAs										
1	Williston	ND	25	58801	North Dakota 1 - Divide	N/A	N/A	N/A	N/A	1
2	Ironwood	MI	31	49938	Michigan 1 - Gogebic	\$45.00	600	N/A	N/A	1
3	McCook	NE	33	69001	Nebraska 8 - Chase	\$45.00	600	N/A	N/A	1
4	Dickinson	ND	36	58601	North Dakota 4 - McKenzie	N/A	N/A	N/A	N/A	1
5	Big Spring	TX	36	79720	Texas 8 - Gaines	N/A	N/A	N/A	N/A	2
6	Logan	WV	37	25601	West Virginia 6 - Lincoln	\$45.00	600	N/A	N/A	3
7	Great Bend	KS	39	67530	Kansas 7 - Trego	\$45.00	600	N/A	N/A	1
8	Nogales	AZ	39	85621	Arizona 6 - Graham	\$45.00	600	N/A	N/A	6
9	Escanaba	MI	41	49829	Michigan 2 - Alger	\$45.00	600	N/A	N/A	1
10	Dodge City	KS	43	67801	Kansas 12 - Hodgeman	\$45.00	600	N/A	N/A	1
11	Iron Mountain	MI	46	49801	Michigan 1 - Gogebic	\$45.00	600	N/A	N/A	1
12	Madisonville	KY	46	42431	Kentucky 2 - Union	N/A	N/A	N/A	N/A	6
13	Houghton	MI	47	49921	Michigan 1 - Gogebic	\$45.00	600	N/A	N/A	1
14	Emporia	KS	48	66801	Kansas 9 - Morris	\$45.00	600	N/A	N/A	5
15	Bartlesville	OK	49	74003	Oklahoma 4 - Nowata	N/A	N/A	\$75.00	700	5
16	Riverton	WY	49	82501	Wyoming 3 - Lincoln	N/A	N/A	N/A	N/A	1
17	Ponca City	OK	50	74601	Oklahoma 3 - Grant	N/A	N/A	N/A	N/A	4
18	Sault Ste. Marie	MI	51	49783	Michigan 2 - Alger	\$45.00	600	N/A	N/A	1
19	Carlsbad	NM	52	88220	New Mexico 6 - Lincoln	N/A	N/A	N/A	N/A	1
20	Lihue	HI	52	96766	Hawaii 1 - Kauai	N/A	N/A	N/A	N/A	5
21	Ada	OK	54	74820	Oklahoma 9 - Garvin	N/A	N/A	\$75.00	700	3
22	Huron	SD	55	57350	South Dakota 8 - Kingsbury	N/A	N/A	N/A	N/A	1
23	Hobbs	NM	55	88240	New Mexico 6 - Lincoln	N/A	N/A	N/A	N/A	2
24	McAlester	OK	56	74501	Oklahoma 6 - Seminole	N/A	N/A	\$75.00	700	4
25	Fairmont	WV	57	26554	West Virginia 3 - Monongalia	N/A	N/A	\$75.00	700	3
26	Kirksville	MO	57	63501	Missouri 3 - Schuyler	\$45.00	600	\$75.00	700	3
27	Marshalltown	IA	58	50158	Iowa 11 - Hardin	N/A	N/A	\$75.00	700	4
28	Rock Springs	WY	59	82901	Wyoming 3 - Lincoln	N/A	N/A	N/A	N/A	1
29	Hays	KS	60	67601	Kansas 7 - Trego	\$45.00	600	N/A	N/A	1
30	Coffeyville	KS	61	67337	Kansas 15 - Elk	\$45.00	600	\$75.00	700	3
31	Brownwood	TX	62	76801	Texas 9 - Runnels	N/A	N/A	N/A	N/A	0
32	Liberal	KS	63	67901	Kansas 11 - Hamilton	\$45.00	600	N/A	N/A	1
33	Vicksburg	MS	64	39180	Mississippi 5 - Washington	\$45.00	600	N/A	N/A	6
34	Mattoon	IL	65	61938	Illinois 7 - Vermilion	N/A	N/A	N/A	N/A	4
35	Alpena	MI	65	49707	Michigan 4 - Cheboygan	\$45.00	600	N/A	N/A	1
36	Marquette	MI	66	49855	Michigan 1 - Gogebic	\$45.00	600	N/A	N/A	1
37	Marinette	WI	67	54134	Wisconsin 4 - Marinette	N/A	N/A	N/A	N/A	1
38	Bemidji	MN	67	56601	Minnesota 2 - Lake of the Wood	N/A	N/A	N/A	N/A	1
39	Butte	MT	67	59701	Montana 6 - Deer Lodge	N/A	N/A	N/A	N/A	2
40	Blytheville	AR	67	72315	Arkansas 4 - Clay	\$45.00	600	N/A	N/A	4

Table A-2 (National)
Lowest Price National Plan With At Least 500 Anytime Minutes by Carrier and BTA

BTA										
Rank	BTA	State	Population [#] ('000)	Sample Zip Code	RSA	ALLTEL		US Cellular		Carrier
						Rate	Min	Rate	Min	
Summary Statistics										
	Count		40	-	-	19	19	7	7	40
	Mode		-	-	-	\$45.00	600	\$75.00	700	1
	Min		25	-	-	\$45.00	600	\$75.00	700	0
	Max		67	-	-	\$45.00	600	\$75.00	700	6
	Median		53	-	-	\$45.00	600	\$75.00	700	1
	Mean		52	-	-	\$45.00	600	\$75.00	700	2
Are all packages the same?						Yes		Yes		

[#] 2002 BTA populations.

N/A = Carrier does not offer service.

* = Could not confirm carrier coverage.

Note: Data is based on the smallest BTAs included in Telephia report.
There are instances where there are multiple BTAs in a given RSA.

Table A-2 (Regional)
Lowest Price Local/Regional Plan With At Least 500 Anytime Minutes by Carrier and BTA

		BTA		Population [#]	Sample		Cingular		AT&T Wireless		T-Mobile		Verizon Wireless		Sprint PCS		Nextel	
Rank	BTA	State	('000)	Zip Code	RSA		Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min
40 Smallest Telephia BTAs																		
1	Williston	ND	25	58801	North Dakota 1 - Divide		N/A	N/A	N/A	N/A	N/A	N/A	\$39.99	500	N/A	N/A	N/A	N/A
2	Ironwood	MI	31	49938	Michigan 1 - Gogebic		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	McCook	NE	33	69001	Nebraska 8 - Chase		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Dickinson	ND	36	58601	North Dakota 4 - McKenzie		N/A	N/A	N/A	N/A	N/A	N/A	\$39.99	500	N/A	N/A	N/A	N/A
5	Big Spring	TX	36	79720	Texas 8 - Gaines		N/A	N/A	N/A	N/A	*	*	N/A	N/A	\$45.00	1000	\$39.99	500
6	Logan	WV	37	25601	West Virginia 6 - Lincoln		N/A	N/A	\$39.99	600	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	Great Bend	KS	39	67530	Kansas 7 - Trego		N/A	N/A	N/A	N/A	*	*	N/A	N/A	N/A	N/A	N/A	N/A
8	Nogales	AZ	39	85621	Arizona 6 - Graham		N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
9	Escanaba	MI	41	49829	Michigan 2 - Alger		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	Dodge City	KS	43	67801	Kansas 12 - Hodgeman		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11	Iron Mountain	MI	46	49801	Michigan 1 - Gogebic		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12	Madisonville	KY	46	42431	Kentucky 2 - Union		\$39.99	550	\$39.99	600	\$49.99	3000	\$39.99	500	N/A	N/A	\$39.99	500
13	Houghton	MI	47	49921	Michigan 1 - Gogebic		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14	Emporia	KS	48	66801	Kansas 9 - Morris		N/A	N/A	\$39.99	600	\$49.99	3000	N/A	N/A	\$45.00	1000	\$39.99	500
15	Bartlesville	OK	49	74003	Oklahoma 4 - Nowata		\$39.99	600	\$39.99	600	\$49.99	3000	N/A	N/A	\$45.00	1000	N/A	N/A
16	Riverton	WY	49	82501	Wyoming 3 - Lincoln		N/A	N/A	N/A	N/A	N/A	N/A	\$39.99	500	N/A	N/A	N/A	N/A
17	Ponca City	OK	50	74601	Oklahoma 3 - Grant		\$39.99	600	\$39.99	600	\$49.99	3000	N/A	N/A	\$45.00	1000	N/A	N/A
18	Sault Ste. Marie	MI	51	49783	Michigan 2 - Alger		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	Carlsbad	NM	52	88220	New Mexico 6 - Lincoln		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$45.00	1000	N/A	N/A
20	Lihue	HI	52	96766	Hawaii 1 - Kauai		N/A	N/A	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
21	Ada	OK	54	74820	Oklahoma 9 - Garvin		\$39.99	600	N/A	N/A	*	*	N/A	N/A	\$45.00	1000	N/A	N/A
22	Huron	SD	55	57350	South Dakota 8 - Kingsbury		N/A	N/A	N/A	N/A	N/A	N/A	\$39.99	500	N/A	N/A	N/A	N/A
23	Hobbs	NM	55	88240	New Mexico 6 - Lincoln		N/A	N/A	N/A	N/A	\$49.99	3000	N/A	N/A	\$45.00	1000	N/A	N/A
24	McAlester	OK	56	74501	Oklahoma 6 - Seminole		\$39.99	600	N/A	N/A	\$49.99	3000	N/A	N/A	\$45.00	1000	N/A	N/A
25	Fairmont	WV	57	26554	West Virginia 3 - Monongalia		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$39.99	500
26	Kirksville	MO	57	63501	Missouri 3 - Schuyler		N/A	N/A	N/A	N/A	*	*	N/A	N/A	\$45.00	1000	N/A	N/A
27	Marshalltown	IA	58	50158	Iowa 11 - Hardin		N/A	N/A	\$39.99	600	N/A	N/A	N/A	N/A	\$45.00	1000	\$39.99	500
28	Rock Springs	WY	59	82901	Wyoming 3 - Lincoln		N/A	N/A	N/A	N/A	N/A	N/A	\$39.99	500	N/A	N/A	N/A	N/A
29	Hays	KS	60	67601	Kansas 7 - Trego		N/A	N/A	N/A	N/A	*	*	N/A	N/A	N/A	N/A	N/A	N/A
30	Coffeyville	KS	61	67337	Kansas 15 - Elk		\$39.99	600	N/A	N/A	*	*	N/A	N/A	N/A	N/A	N/A	N/A
31	Brownwood	TX	62	76801	Texas 9 - Runnels		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
32	Liberal	KS	63	67901	Kansas 11 - Hamilton		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
33	Vicksburg	MS	64	39180	Mississippi 5 - Washington		\$49.99	600	\$39.99	600	\$49.99	3000	N/A	N/A	\$45.00	1000	\$39.99	500
34	Mattoon	IL	65	61938	Illinois 7 - Vermilion		N/A	N/A	N/A	N/A	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
35	Alpena	MI	65	49707	Michigan 4 - Cheboygan		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
36	Marquette	MI	66	49855	Michigan 1 - Gogebic		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
37	Marinette	WI	67	54134	Wisconsin 4 - Marinette		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$39.99	500
38	Bemidji	MN	67	56601	Minnesota 2 - Lake of the Wood		N/A	N/A	N/A	N/A	*	*	N/A	N/A	N/A	N/A	N/A	N/A
39	Butte	MT	67	59701	Montana 6 - Deer Lodge		N/A	N/A	N/A	N/A	\$49.99	3000	\$39.99	500	N/A	N/A	N/A	N/A
40	Blytheville	AR	67	72315	Arkansas 4 - Clay		\$39.99	600	\$39.99	600	N/A	N/A	N/A	N/A	\$45.00	1000	N/A	N/A

Table A-2 (Regional)
Lowest Price Local/Regional Plan With At Least 500 Anytime Minutes by Carrier and BTA

Rank	BTA	State	BTA Population # ('000)	Sample Zip Code	RSA	Cingular		AT&T Wireless		T-Mobile		Verizon Wireless		Sprint PCS		Nextel	
						Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min
Summary Statistics																	
	Count		40	-	-	8	8	10	10	11	11	10	10	15	15	10	10
	Mode		-	-	-	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
	Min		25	-	-	\$39.99	550	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
	Max		67	-	-	\$49.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
	Median		53	-	-	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
	Mean		52	-	-	\$41.24	594	\$39.99	600	\$49.99	3000	\$39.99	500	\$45.00	1000	\$39.99	500
Are all packages the same?						No		Yes		Yes		Yes		Yes		Yes	

2002 BTA populations.

N/A = Carrier does not offer service.

* = Could not confirm carrier coverage.

Note: Data is based on the smallest BTAs included in Telephia report.
There are instances where there are multiple BTAs in a given RSA.

Table A-2 (Regional)
Lowest Price Local/Regional Plan With At Least 500 Anytime Minutes by Carrier and BTA

BTA						ALLTEL		US Cellular		Carriers
Rank	BTA	State	Population [#] ('000)	Sample Zip Code	RSA	Rate	Min	Rate	Min	
40 Smallest Telephia BTAs										
1	Williston	ND	25	58801	North Dakota 1 - Divide	N/A	N/A	N/A	N/A	1
2	Ironwood	MI	31	49938	Michigan 1 - Gogebic	\$39.95	1000	N/A	N/A	1
3	McCook	NE	33	69001	Nebraska 8 - Chase	\$39.95	1000	N/A	N/A	1
4	Dickinson	ND	36	58601	North Dakota 4 - McKenzie	N/A	N/A	N/A	N/A	1
5	Big Spring	TX	36	79720	Texas 8 - Gaines	N/A	N/A	N/A	N/A	2
6	Logan	WV	37	25601	West Virginia 6 - Lincoln	\$39.95	1000	N/A	N/A	2
7	Great Bend	KS	39	67530	Kansas 7 - Trego	\$39.95	1000	N/A	N/A	1
8	Nogales	AZ	39	85621	Arizona 6 - Graham	\$39.95	1000	N/A	N/A	6
9	Escanaba	MI	41	49829	Michigan 2 - Alger	\$39.95	1000	N/A	N/A	1
10	Dodge City	KS	43	67801	Kansas 12 - Hodgeman	\$39.95	1000	N/A	N/A	1
11	Iron Mountain	MI	46	49801	Michigan 1 - Gogebic	\$39.95	1000	N/A	N/A	1
12	Madisonville	KY	46	42431	Kentucky 2 - Union	N/A	N/A	N/A	N/A	5
13	Houghton	MI	47	49921	Michigan 1 - Gogebic	\$39.95	1000	N/A	N/A	1
14	Emporia	KS	48	66801	Kansas 9 - Morris	\$39.95	1000	N/A	N/A	5
15	Bartlesville	OK	49	74003	Oklahoma 4 - Nowata	N/A	N/A	\$40.00	500	5
16	Riverton	WY	49	82501	Wyoming 3 - Lincoln	N/A	N/A	N/A	N/A	1
17	Ponca City	OK	50	74601	Oklahoma 3 - Grant	N/A	N/A	N/A	N/A	4
18	Sault Ste. Marie	MI	51	49783	Michigan 2 - Alger	\$39.95	1000	N/A	N/A	1
19	Carlsbad	NM	52	88220	New Mexico 6 - Lincoln	N/A	N/A	N/A	N/A	1
20	Lihue	HI	52	96766	Hawaii 1 - Kauai	N/A	N/A	N/A	N/A	5
21	Ada	OK	54	74820	Oklahoma 9 - Garvin	N/A	N/A	\$40.00	500	3
22	Huron	SD	55	57350	South Dakota 8 - Kingsbury	N/A	N/A	N/A	N/A	1
23	Hobbs	NM	55	88240	New Mexico 6 - Lincoln	N/A	N/A	N/A	N/A	2
24	McAlester	OK	56	74501	Oklahoma 6 - Seminole	N/A	N/A	\$40.00	500	4
25	Fairmont	WV	57	26554	West Virginia 3 - Monongalia	N/A	N/A	\$35.00	500	2
26	Kirksville	MO	57	63501	Missouri 3 - Schuyler	\$39.95	1000	\$40.00	500	3
27	Marshalltown	IA	58	50158	Iowa 11 - Hardin	N/A	N/A	\$40.00	500	4
28	Rock Springs	WY	59	82901	Wyoming 3 - Lincoln	N/A	N/A	N/A	N/A	1
29	Hays	KS	60	67601	Kansas 7 - Trego	\$39.95	1000	N/A	N/A	1
30	Coffeyville	KS	61	67337	Kansas 15 - Elk	\$39.95	1000	\$40.00	500	3
31	Brownwood	TX	62	76801	Texas 9 - Runnels	N/A	N/A	N/A	N/A	0
32	Liberal	KS	63	67901	Kansas 11 - Hamilton	\$39.95	1000	N/A	N/A	1
33	Vicksburg	MS	64	39180	Mississippi 5 - Washington	\$39.95	1000	N/A	N/A	6
34	Mattoon	IL	65	61938	Illinois 7 - Vermilion	N/A	N/A	N/A	N/A	4
35	Alpena	MI	65	49707	Michigan 4 - Cheboygan	\$39.95	1000	N/A	N/A	1
36	Marquette	MI	66	49855	Michigan 1 - Gogebic	\$39.95	1000	N/A	N/A	1
37	Marinette	WI	67	54134	Wisconsin 4 - Marinette	N/A	N/A	N/A	N/A	1
38	Bemidji	MN	67	56601	Minnesota 2 - Lake of the Wood	N/A	N/A	N/A	N/A	0
39	Butte	MT	67	59701	Montana 6 - Deer Lodge	N/A	N/A	N/A	N/A	2
40	Blytheville	AR	67	72315	Arkansas 4 - Clay	\$39.95	1000	N/A	N/A	4

Table A-2 (Regional)
Lowest Price Local/Regional Plan With At Least 500 Anytime Minutes by Carrier and BTA

BTA										
Rank	BTA	State	Population [#] (‘000)	Sample Zip Code	RSA	ALLTEL		US Cellular		Carriers
						Rate	Min	Rate	Min	
Summary Statistics										
	Count		40	-	-	19	19	7	7	40
	Mode		-	-	-	\$39.95	1000	\$40.00	500	1
	Min		25	-	-	\$39.95	1000	\$35.00	500	0
	Max		67	-	-	\$39.95	1000	\$40.00	500	6
	Median		53	-	-	\$39.95	1000	\$40.00	500	1
	Mean		52	-	-	\$39.95	1000	\$39.29	500	2
Are all packages the same?						Yes		No		

[#] 2002 BTA populations.

N/A = Carrier does not offer service.

* = Could not confirm carrier coverage.

Note: Data is based on the smallest BTAs included in Telephia report.
There are instances where there are multiple BTAs in a given RSA.

Table A-3 (National)
Lowest Price National Plan With At Least 500 Anytime Minutes by Carrier and RSA

Rank	City	State	RSA Population # ('000)	Sample Zip Code	RSA	Cingular Rate	Cingular Min	AT&T Wireless Rate	AT&T Wireless Min	T-Mobile Rate	T-Mobile Min	Verizon Wireless Rate	Verizon Wireless Min	Sprint PCS Rate	Sprint PCS Min	Nextel Rate	Nextel Min
RSAs with Cingular and AT&T Coverage Overlap																	
1	Litchfield	CT	182	06759	Connecticut 1-Litchfield	\$49.99	600	\$39.99	600	\$39.99	600	N/A	N/A	\$45.00	500	\$39.99	500
2	La Belle	FL	288	33935	Florida 1 - Collier	N/A	N/A	\$39.99	600	*	*	\$49.99	500	\$45.00	500	\$39.99	500
3	Moore Haven	FL	247	33471	Florida 2 - Glades	N/A	N/A	\$39.99	600	*	*	\$49.99	500	\$45.00	500	\$39.99	500
4	Tavares	FL	513	32778	Florida 4 - Citrus	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
5	Palatka	FL	120	32177	Florida 5 - Putnam	\$49.99	600	N/A	N/A	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
6	Newkirk	OK	215	74647	Oklahoma 3 - Grant	\$49.99	600	\$39.99	600	\$39.99	600	N/A	N/A	N/A	N/A	N/A	N/A
7	Jacksboro	TX	91	76458	Texas 6 - Jack	\$49.99	600	\$39.99	600	*	*	N/A	N/A	\$45.00	500	N/A	N/A
8	Hemphill	TX	301	75948	Texas 11 - Cherokee	\$49.99	600	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	Rocksprints	TX	228	78880	Texas 18 - Edwards	\$49.99	600	N/A	N/A	*	*	N/A	N/A	N/A	N/A	N/A	N/A
10	George West	TX	235	78022	Texas-19 Atascoa	\$49.99	600	N/A	N/A	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
11	Rockport	TX	158	78382	Texas-20 Wilson	\$49.99	600	N/A	N/A	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
Summary Statistics																	
Count			11	-	-	9	9	6	6	6	6	6	6	8	8	7	7
Mode			-	-	-	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
Min			91	-	-	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
Max			513	-	-	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
Median			228	-	-	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
Mean			234	-	-	\$49.99	600	\$39.99	600	\$39.99	600	\$49.99	500	\$45.00	500	\$39.99	500
Are all packages the same?						Yes		Yes		Yes		Yes		Yes		Yes	

2000 Census populations.

N/A = Carrier does not offer service.

* = Could not confirm carrier coverage.

Note: Data is based on the smallest BTAs included in Telephia report.

There are instances where there are multiple BTAs in a given RSA.

Table A-3 (National)
Lowest Price National Plan With At Least 500 Anytime Minutes by Carrier and RSA

Rank	City	State	RSA		RSA	ALLTEL		US Cellular		Carrier
			Population [#] (⁰ 00)	Sample Zip Code		Rate	Min	Rate	Min	
RSAs with Cingular and AT&T Coverage Overlap										
1	Litchfield	CT	182	06759	Connecticut 1-Litchfield	N/A	N/A	N/A	N/A	5
2	La Belle	FL	288	33935	Florida 1 - Collier	\$45.00	600	N/A	N/A	5
3	Moore Haven	FL	247	33471	Florida 2 - Glades	\$45.00	600	N/A	N/A	5
4	Tavares	FL	513	32778	Florida 4 - Citrus	\$45.00	600	N/A	N/A	7
5	Palatka	FL	120	32177	Florida 5 - Putnam	\$45.00	600	N/A	N/A	6
6	Newkirk	OK	215	74647	Oklahoma 3 - Grant	N/A	N/A	N/A	N/A	3
7	Jacksboro	TX	91	76458	Texas 6 - Jack	N/A	N/A	N/A	N/A	3
8	Hemphill	TX	301	75948	Texas 11 - Cherokee	N/A	N/A	N/A	N/A	1
9	Rocksprints	TX	228	78880	Texas 18 - Edwards	N/A	N/A	\$75.00	700	2
10	George West	TX	235	78022	Texas-19 Atascoa	N/A	N/A	\$75.00	700	6
11	Rockport	TX	158	78382	Texas-20 Wilson	N/A	N/A	\$75.00	700	6
Summary Statistics										
	Count		11	-	-	4	4	3	3	11
	Mode		-	-	-	\$45.00	600	\$75.00	700	5
	Min		91	-	-	\$45.00	600	\$75.00	700	1
	Max		513	-	-	\$45.00	600	\$75.00	700	7
	Median		228	-	-	\$45.00	600	\$75.00	700	5
	Mean		234	-	-	\$45.00	600	\$75.00	700	4
Are all packages the same?						Yes		Yes		

[#] 2000 Census populations.

N/A = Carrier does not offer service.

* = Could not confirm carrier coverage.

Note: Data is based on the smallest BTAs included in Telephia report.
There are instances where there are multiple BTAs in a given RSA.

Table A-3 (Regional)
Lowest Price Local/Regional Plan With At Least 500 Anytime Minutes by Carrier and RSA

RSA					RSA	Cingular		AT&T Wireless		T-Mobile		Verizon Wireless		Sprint PCS		Nextel	
Rank	City	State	Population [#] (⁰⁰⁰)	Sample Zip Code		Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min	Rate	Min
RSAs with Cingular and AT&T Coverage Overlap																	
1	Litchfield	CT	182	06759	Connecticut 1-Litchfield	\$39.99	600	\$39.99	600	\$49.99	3000	N/A	N/A	\$45.00	1000	\$39.99	500
2	La Belle	FL	288	33935	Florida 1 - Collier	N/A	N/A	\$39.99	600	*	*	\$39.99	600	\$45.00	1000	\$39.99	500
3	Moore Haven	FL	247	33471	Florida 2 - Glades	N/A	N/A	\$39.99	600	*	*	\$39.99	600	\$45.00	1000	\$39.99	500
4	Tavares	FL	513	32778	Florida 4 - Citrus	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
5	Palatka	FL	120	32177	Florida 5 - Putnam	\$39.99	600	N/A	N/A	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
6	Newkirk	OK	215	74647	Oklahoma 3 - Grant	\$39.99	600	\$39.99	600	\$49.99	3000	N/A	N/A	N/A	N/A	N/A	N/A
7	Jacksboro	TX	91	76458	Texas 6 - Jack	\$39.99	600	\$39.99	600	*	*	N/A	N/A	\$45.00	1000	N/A	N/A
8	Hemphill	TX	301	75948	Texas 11 - Cherokee	\$39.99	600	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	Rocksprints	TX	228	78880	Texas 18 - Edwards	\$39.99	600	N/A	N/A	*	*	N/A	N/A	N/A	N/A	N/A	N/A
10	George West	TX	235	78022	Texas-19 Atascoa	\$39.99	600	N/A	N/A	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
11	Rockport	TX	158	78382	Texas-20 Wilson	\$39.99	600	N/A	N/A	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
Summary Statistics																	
Count			11	-	-	9	9	6	6	6	6	6	6	8	8	7	7
Mode			-	-	-	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
Min			91	-	-	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
Max			513	-	-	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
Median			228	-	-	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
Mean			234	-	-	\$39.99	600	\$39.99	600	\$49.99	3000	\$39.99	600	\$45.00	1000	\$39.99	500
Are all packages the same?						Yes		Yes		Yes		Yes		Yes		Yes	

2000 Census populations.

N/A = Carrier does not offer service.

* = Could not confirm carrier coverage.

Note: Data is based on the smallest BTAs included in Telephia report.

There are instances where there are multiple BTAs in a given RSA.

Table A-3 (Regional)
Lowest Price Local/Regional Plan With At Least 500 Anytime Minutes by Carrier and RSA

Rank	City	State	RSA		RSA	ALLTEL		US Cellular		Carriers
			Population [#] (⁰ 000)	Sample Zip Code		Rate	Min	Rate	Min	
RSAs with Cingular and AT&T Coverage Overlap										
1	Litchfield	CT	182	06759	Connecticut 1-Litchfield	N/A	N/A	N/A	N/A	5
2	La Belle	FL	288	33935	Florida 1 - Collier	\$39.95	1000	N/A	N/A	5
3	Moore Haven	FL	247	33471	Florida 2 - Glades	\$39.95	1000	N/A	N/A	5
4	Tavares	FL	513	32778	Florida 4 - Citrus	\$39.95	1000	N/A	N/A	7
5	Palatka	FL	120	32177	Florida 5 - Putnam	\$39.95	1000	N/A	N/A	6
6	Newkirk	OK	215	74647	Oklahoma 3 - Grant	N/A	N/A	N/A	N/A	3
7	Jacksboro	TX	91	76458	Texas 6 - Jack	N/A	N/A	N/A	N/A	3
8	Hemphill	TX	301	75948	Texas 11 - Cherokee	N/A	N/A	N/A	N/A	1
9	Rocksprints	TX	228	78880	Texas 18 - Edwards	N/A	N/A	\$35.00	500	2
10	George West	TX	235	78022	Texas-19 Atascoa	N/A	N/A	\$35.00	500	6
11	Rockport	TX	158	78382	Texas-20 Wilson	N/A	N/A	\$35.00	500	6
Summary Statistics										
	Count		11	-	-	4	4	3	3	11
	Mode		-	-	-	\$39.95	1000	\$35.00	500	5
	Min		91	-	-	\$39.95	1000	\$35.00	500	1
	Max		513	-	-	\$39.95	1000	\$35.00	500	7
	Median		228	-	-	\$39.95	1000	\$35.00	500	5
	Mean		234	-	-	\$39.95	1000	\$35.00	500	4
Are all packages the same?						Yes		Yes		

[#] 2000 Census populations.

N/A = Carrier does not offer service.

* = Could not confirm carrier coverage.

Note: Data is based on the smallest BTAs included in Telephia report.
There are instances where there are multiple BTAs in a given RSA.

CURRICULUM VITAE

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EDUCATION

B.S., CORNELL UNIVERSITY, Electrical Engineering (with honors), 1966

M.S., CORNELL UNIVERSITY, Electrical Engineering, 1967

M.A., STANFORD UNIVERSITY, Economics, 1975

Ph.D., STANFORD UNIVERSITY, Engineering-Economic Systems, 1976

PRESENT POSITIONS

UNIVERSITY OF CALIFORNIA, BERKELEY, 2002- present
Chair, Department of Economics

UNIVERSITY OF CALIFORNIA, BERKELEY, 1983- present
Professor of Economics

UNIVERSITY OF CALIFORNIA, BERKELEY, 1997-present
Affiliated Professor of Business Administration

PROFESSIONAL EXPERIENCE

U.S. DEPARTMENT OF JUSTICE, Antitrust Division, 1993-1995
Deputy Assistant Attorney General for Economics

UNIVERSITY OF CALIFORNIA, BERKELEY, 1990-1993
Affiliated Professor of Business Administration

UNIVERSITY OF CALIFORNIA ENERGY INSTITUTE, 1984-1993
Director

STANFORD UNIVERSITY, 1982-1983

Associate Professor of Engineering-Economic Systems (with tenure)

UNIVERSITY OF CALIFORNIA, BERKELEY, 1979-1983

Associate Professor of Economics (with tenure)

UNIVERSITY OF CALIFORNIA, BERKELEY, 1976-1979

Assistant Professor of Economics

STANFORD UNIVERSITY, 1975-1976

Research Associate, Department of Economics and Institute for Energy Studies

U.S. NAVY, 1967-1971

Lieutenant, Senior Grade

FELLOWSHIPS AND AWARDS

Visiting Fellow, Churchill College, University of Cambridge, 1979

Visiting Fellow, Nuffield College, University of Oxford, 1979

Fulbright Scholar, South America, 1989

Recipient of the 1st Annual Berkeley Center for Law and Technology Award for Contributions to the Development of Law and Public Policy, 1996

Listed in *Who's Who*

PROFESSIONAL ACTIVITIES

President, *Industrial Organization Society*, 1994-1995

Associate Editor, *Journal of Sports Economics*, 1999-

Associate Editor, *Journal of Economic Theory*, 1983-1989

Associate Editor, *Journal of Industrial Economics*, 1990-1993

Associate Editor, *Review of Industrial Organization*, 1990-1993

Vice-Chair, American Bar Association Antitrust Economics Committee, 1993-1995

Co-Director, Program on Workable Energy Regulation, 1990-1993

Review Panel, National Science Foundation, Economics Program, 1985

Review Panel, National Science Foundation, Regulation Program, 1985-1986

Advisor to U.S. Department of Energy, Energy Assessment Panel on Energy Security, 1992

Member of Advisory Board, California Institute for Energy Efficiency, 1992-1993

Member of the Advisory Board, Institute for Business and Economic Research, University of California at Berkeley, 1998-present ; Chair of the Advisory Board, 2001-2.

Conference Organizer: European Summer Symposium in Economic Theory, Gerzensee, 1998; Post-Chicago Economics Conference, Washington, D.C., May 26-27, 1994; International Comparisons of Electricity Regulation, Toulouse, May 1993; Economics of Energy Conservation, Berkeley, June 1992; Telecommunications Policy Research Conference, 1988, 1989; Developments in Electricity Regulation, Berkeley, June 1987

Session Organizer: 1994 Meetings of the American Economic Association; 1987 Meetings of the Econometrics Society; 1984 Meetings of the American Economic Association; 1983 Meetings of ORSA/TIMS Associations

Nominating Committee Member, Industrial Organization Society Professional Service Award, 1998, 1999

Referee for: *American Economic Review*, *Econometrica*, *International Economic Review*, *Journal of Political Economy*, *Quarterly Journal of Economics*, *Rand Journal*, *Review of Economic Studies*. Occasional referee for other journals

Member of American Economic Association, Econometric Society, Sigma Xi, Tau Beta Pi, Eta Kappa Nu.

Associate Member, American Bar Association, Antitrust Section

PUBLICATIONS

Articles

- 1) "Antitrust for Patent Pools: A Century of Policy Evolution," forthcoming, *Stanford Technology Law Review*
- 2) "Allocating Transmission to Mitigate Market Power in Electricity Networks," (with Karsten Neuhoff and David Newbery), forthcoming, *Rand Journal of Economics*
- 3) "Market Structure, Organizational Structure, and R&D Diversity," (with Joseph Farrell and Michael Katz), forthcoming, *Economics for an Imperfect World: Essays in Honor of Joseph E. Stiglitz*, MIT Press.
- 4) "Is Innovation King at the Antitrust Agencies? The Intellectual Property Guidelines Five Years Later," with Willard Tom, *Antitrust Law Journal*, vol. 69, 2001, pp. 43-86.

- 5) "When Good Value Chains Go Bad: The Economics of Indirect Liability for Copyright Enforcement," with Michael Katz, *Hastings Law Journal*, vol. 52, no. 4, April 2001, pp. 961-990.
- 6) "An Economist's Guide to U.S. v. Microsoft," with Michael Katz, *Journal of Economic Perspectives*, vol. 15, no. 2, Spring 2001, pp. 25-44.
- 7) "The Analysis of Professional Sports Leagues as Joint Ventures," with Michael Flynn, *The Economic Journal*, vol. 111, no. 469, February 2001, pp. 27-46.
- 8) "Exclusive Dealing, Preferential Dealing, and Dynamic Efficiency," *Review of Industrial Organization*, vol. 16, no. 2, March 2000, pp. 167-184.
- 9) "An Economic Model of Rationing," with Paul Klemperer, *Rand Journal of Economics*, vol. 31, no. 1, Spring 2000, pp. 1-21.
- 10) "Antitrust Policy for the Licensing of Intellectual Property: An International Comparison," *International Journal of Technology Management*, vol. 19, no. 1/2, 2000, pp. 206-223.
- 11) "Competition Policy," with Oliver Williamson, *The New Palgrave Dictionary of Law and Economics*, Macmillan, 1998.
- 12) "Antitrust Issues in the Licensing of Intellectual Property: The Nine No-No's Meet the Nineties," with Carl Shapiro, *Brookings Papers: Microeconomics*, 1997, pp. 283-336.
- 13) "Do Gasoline Prices Respond Asymmetrically to Crude Oil Price Changes?" with Severin Borenstein and A. Colin Cameron, *Quarterly Journal of Economics*, vol. 112, Issue 1, February 1997, pp. 305-339.
- 14) "An Economic Analysis of Unilateral Refusals to License Intellectual Property," with Carl Shapiro, *Proceedings of the National Academy of Sciences of the United States of America*, vol. 93, no. 23, November 12, 1996, pp. 12749-12755.
- 15) "The Use of Innovation Markets: A Reply to Hay, Rapp and Hoerner," with Steven Sunshine, *Antitrust Law Journal*, vol. 64, no.1, Fall 1995, pp. 75-82.
- 16) "Defining the Intersection of Intellectual Property and the Antitrust Laws: The 1995 Antitrust Guidelines for the Licensing of Intellectual Property," *Antitrust*, vol. 9, issue 3, Summer, 1995.
- 17) "Regulating Complementary Products: A Comparative Institutional Analysis," with Michael Riordan, *Rand Journal of Economics*, vol. 26, no. 2, Summer, 1995, pp. 243-256.
- 18) "Incorporating Dynamic Efficiency Concerns in Merger Analysis: The Use of Innovation Markets," with Steven Sunshine, *Antitrust Law Journal*, vol. 63, no. 2, Winter 1995, pp. 569-602. Reprinted in Andrew I. Gavil (ed.), *An Antitrust Anthology*, Anderson Publishing, 1996.

- 19) "The Dynamic Efficiency of Regulatory Constitutions," with David Newbery, *Rand Journal of Economics*, vol. 25, no. 4, Winter, 1994, pp. 538-554.
- 20) "A Review and Analysis of Utility Conservation Incentive Programs," with Steven Stoft, *The Yale Journal on Regulation*, Winter, 1994, pp. 1-42.
- 21) "Coordination in the Wholesale Market: Where does it Work?" with Edward Kahn and Matthew White, *The Electricity Journal*, vol. 6, no. 8, October 1993, pp. 51-59.
- 22) "Uncle Sam at the Gas Pump: The Causes and Consequences of Gasoline Distribution Regulations," with Severin Borenstein, *Regulation*, vol. 16, no. 2, 1993, pp. 63-75.
- 23) "Product Line Rivalry with Brand Differentiation," with Carmen Matutes, *The Journal of Industrial Economics*, September, 1993, pp. 223-240.
- 24) "Alternative Entry Paths: The Build or Buy Decision," with David Newbery, *Journal of Economics, Management, and Strategy*, Spring, 1992, pp. 129-150.
- 25) "Introduction to Symposium on Compatibility: Incentives and Market Structure," *The Journal of Industrial Economics*, March 1992, pp. 1-8.
- 26) "Legal and Economic Issues in the Commercialization of New Technology," *Journal of Institutional and Theoretical Economics*, March 1991, pp. 155-181.
- 27) "Multiproduct Competition," with Carmen Matutes, *Annales d'Economie et de Statistique*, vol. 18, April/June 1990, pp. 151-163.
- 28) "Optimal Patent Length and Breadth," with C. Shapiro, *Rand Journal of Economics*, vol. 21, no. 1, Spring 1990, pp. 106-112.
- 29) "The Role of Potential Competition in Industrial Organization," *Journal of Economic Perspectives*, vol. 3, No. 3, Summer 1989, pp. 107-127. Reprinted in Bonanno, G. and D. Brandolini (eds.), *Industrial Structure in the New Industrial Economics*, Clarendon Press, Oxford, 1990, pp. 38-67.
- 30) "Investment and Coordination in Oligopolistic Industries," with M. Lieberman, *Rand Journal of Economics*, vol. 18, no. 1, Spring 1987, pp. 17-33.
- 31) "Comment on Levin, R., A. Klevorick, R. Nelson, and S. Winter, 'Appropriating the Returns from Industrial Research and Development,'" *Brookings Papers on Economic Activity*, vol. 3, 1987, pp. 821-824.
- 32) "Investing Under Regulatory Uncertainty: What To Do When the Rules Change," with H. Chao and S. Peck, *Energy Systems and Policy*, vol. 9, no. 4, 1986, pp. 385-396.
- 33) "Efficient Pricing During Oil Supply Disruptions," with K. Mork, *Energy Journal*, vol. 7, no. 2, April 1986, pp. 51-68.
- 34) "Entry Deterrence and the Free Rider Problem," with X. Vives, *Review of Economic Studies*, vol. LIII(1), no. 172, January 1986, pp. 71-84.

- 35) "Competition with Lumpy Investment," with R. Harris, *Rand Journal of Economics*, vol. 15, no. 2, Summer 1984, pp. 197-212.
- 36) "Will Oil Markets Tighten Again? A Survey of Policies to Manage Possible Oil Supply Disruptions," with K. Mork, *Journal of Policy Modeling*, vol. 6, no. 1, 1984, pp. 111-142.
- 37) "Customer and Investor Evaluations of Power Technologies: Conflicts and Common Grounds," with H. Chao and S. Peck, *Public Utilities Fortnightly*, vol. 113, no. 9, April 26, 1984, pp. 36-41.
- 38) "Preemptive Patenting and the Persistence of Monopoly: Reply," with D. Newbery, *American Economic Review*, vol. 74, no. 1, March 1984, pp. 251-253.
- 39) "Uncertain Innovation and the Persistence of Monopoly: Comment," with D. Newbery, *American Economic Review*, vol. 74, no. 1, March 1984, pp. 238-242.
- 40) "Strategic Considerations in Invention and Innovation: The Case of Natural Resources," with P. Dasgupta and J. Stiglitz, *Econometrica*, vol. 51, no. 5, September 1983, pp. 1439-1448. Reprinted in Binmore, K. and P. Dasgupta (eds.), *Economic Organizations as Games*, Basil Blackwell.
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- 42) "Invention and Innovation Under Alternative Market Structures: The Case of Natural Resources," with P. Dasgupta and J. Stiglitz, *Review of Economic Studies*, vol. 49(4), no. 158, October 1982, pp. 567-582.
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- 44) "Investment Decisions with Economies of Scale and Learning," with R. Harris, *American Economic Review*, Papers and Proceedings, vol. 71, no. 2, May 1981, pp. 172-177.
- 45) "Reducing Uranium Resource Uncertainty: Is it Worth the Cost?" with R. Richels, *Resources and Energy*, vol. 3, 1981, pp. 13-37.
- 46) "Optimal Depletion of an Uncertain Stock," *Review of Economic Studies*, vol. 46, no. 142, January 1979, pp. 47-58.
- 47) "An Overview of the Economic Theory of Uncertainty and Its Implications for Energy Supply," with D. Newbery and J. Stiglitz, *Electric Power Research Institute Technical Report*, January 1978.
- 48) "Dominant Firm Pricing with Exhaustible Resources," *Bell Journal of Economics*, Autumn, vol. 9, no. 2, 1978, pp. 385-395.
- 49) "Factor Price Stabilization with Flexible Production," *Annals of Economic and Social*

Measurement, vol. 5, no. 5, 1978, pp. 521-533.

- 50) "The Effects of Risk on Prices and Quantities of Energy Supplies," with J. Stiglitz, *Electric Power Research Institute Technical Report*, in four volumes, May 1978.
- 51) "Potential Competition and the Monopoly Price of an Exhaustible Resource," with S. Goldman, *Proceedings of the Lawrence Symposium on Systems and Decision Sciences*, October 1977, pp. 205-207; also published in *Journal of Economic Theory*, vol. 17, no. 2, April 1978, pp. 319-331.
- 52) "Resource Extraction with Differential Information," *American Economic Review*, Papers and Proceedings, February 1977, pp. 250-254.
- 53) "LSA Operation of Large Volume Bulk Gas Samples," *IEEE Transactions on Electron Devices*, vol. Ed-14, no. 9, September 1967.

Books

- 1) *International Comparisons of Electricity Regulation*, with Edward Kahn, Cambridge University Press, 1996.
- 2) *The Environment of Oil*, Kluwer Academic Press, 1993.
- 3) *Regulatory Choices: A Perspective on Developments in Energy Policy*, University of California Press, 1991.
- 4) *Strategic Competition and Barriers to Entry*, with P. Geroski and A. Jacquemin, in series vol. 41: *Theory of the Firm and Industrial Organization*, Lesourne, J. and H. Sonnenschein (eds.), *Fundamentals of Pure and Applied Economics*, Harwood Academic Press, 1990.

Chapters in Books

- 1) "Networks, Standards, and the Use of Market Dominance: Microsoft (1995)," in Kwoka, J. and L. White (eds.), *The Antitrust Revolution: The Role of Economics*, 3rd edition, Oxford University Press, 1998.
- 2) "Unilateral Refusals to License Intellectual Property and International Competition Policy," in E. Hope and P. Maeleng (eds.), *Competition and Trade Policies: Coherence or Conflict?*, Routledge Press, London, 1998.
- 3) "The Efficiency of Market Coordination: Evidence from Wholesale Electric Power Pools," with Edward Kahn and Matthew White, in W. Sichel and D.L. Alexander (eds.), *Networks, Infrastructure, and the New Task for Regulation*, The University of Michigan Press, Ann Arbor, 1996.

- 4) "On the Delegation of Pricing Authority in Shared ATM Networks," in M. Guerin-Calvert and S. Wildman (eds.), *Electronic Services Networks: A Business and Public Policy Challenge*, Greenwood, Praeger Publishers, New York, 1991.
- 5) "Mobility Barriers and the Value of Incumbency," Chapter 8 in Schmalensee, R. and R. Willig (eds.), *Handbook of Industrial Organization*, North-Holland, 1989.
- 6) "Forecasting Technology Adoption with an Application to Telecommunications Bypass," with Jeffrey Rohlfs, in de Fontenay, A., M.H. Shugard and D.S. Sibley (eds.), *Telecommunications Demand Modelling: An Integrated View*, North-Holland, Amsterdam, 1990, pp. 399-412.
- 7) "Preemptive Competition," in G. F. Mathewson and J. Stiglitz (eds.), *New Directions in the Analysis of Market Structure*, MIT Press, Cambridge; Macmillan Press, London, 1986.
- 8) "Coping with Major Oil Disruptions," in J. Plummer, editor, *Energy Vulnerability*, Ballinger Press, 1982.
- 9) "Patents, Sleeping Patents, and Entry Deterrence," in S. Salop, editor, *Strategy, Predation, and Antitrust Analysis*, Federal Trade Commission, 1981.
- 10) "The Social and Private Value of Exploration Information," in J. Ramsey, editor, *Symposium on the Economics of Exploration for Energy Resources*, Greenwich CT: JAI Press, 1981.
- 11) "Search Strategies and Private Incentives for Resource Exploration," in R. Pindyck, (ed.), *Advances in the Economics of Energy and Resources*, vol. 2, JAI Press, 1979, pp. 149-169.
- 12) "The Economic Common Sense of Controlling Nuclear Power Development," with M. Boskin, *The California Nuclear Initiative*, Institute for Energy Studies, Stanford University, 1976; also published in *California Energy: The Economic Factors*, Federal Reserve Bank of San Francisco, 1976.
- 13) "A 1.1 GHz Scanned Acoustic Microscope," in *Acoustical Holography*, vol. 4, Plenum Press, 1972.

Working Papers

- 1) "Vertical Integration in Gasoline Supply: An Empirical Test of Raising Rivals' Costs" (with Justine Hastings), accepted subject to minor revision, *Journal of Industrial Economics*
- 2) "Innovation and Foreclosure in a Market for Systems," (with Michael Riordan)
- 3) "Converging Doctrines? US and EU Antitrust Policy for the Licensing of Intellectual Property"

INVITED LECTURES AND TESTIMONY (Since 1986)

Discussion of “Efficient Patent Pools,” by Lerner and Tirole, American Economic Association Annual Meetings, January 3, 2004

“A Welfare Analysis of Intellectual Property Bundling,” University of British Columbia Industrial Organization Conference, Vancouver, July 11, 2003

“A Welfare Analysis of Intellectual Property Bundling,” Workshop on Licensing, Universita Cattolica del Sacro Cuore, Milan Italy, June 6, 2003

CNBC television network: discussion of gasoline pricing, August 26, 2003.

“A Taxonomy of Copyright Infringement,” International Industrial Organization Conference, Boston, April 4, 2003.

“Should Good Patents Come in Small Packages? A Welfare Analysis of Intellectual Property Bundling,” University of California at Berkeley Industrial Organization Seminar, February 18, 2003. Also presented at the International Industrial Organization Conference, Boston, April 4, 2003; University of British Columbia Industrial Organization Conference, Vancouver, July 11, 2003; Milan Workshop on Licensing, June 5, 2003.

Comments on a “Global Patent System for Pharmaceuticals: Avenues for Moving Forward”, joint AEI and Brookings Conference, Washington, D.C., January 6, 2003.

Discussion of “Cartel Pricing Dynamics in the Presence of an Antitrust Authority,” presented at the American Economic Association Meetings, Washington, D.C., January 5, 2003.

“Patent Pools: 100 Years of Law and Economic Solitude,” presented at Competing Monopolies: Challenges at the Intersection of Competition and Intellectual Property Laws,” University of Toronto, May 10, 2002.

“Product Improvement and Technological Tying,” presented at Hong Kong University of Science and Technology, April 16, 2002 and Peking University, April 19, 2002.

“Should Innovation Have a Role in Merger Policy?,” presented at the FTC/DOJ Hearings on Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy, Berkeley, CA, February 25, 2002.

“The Evolution of Guidelines,” presented at the opening session of the FTC/DOJ Hearings on Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy, Washington, D.C., February 6, 2002.

“Review of OECD Proposals to Study Product Market Competition,” OECD Workshop on Product Market Competition and Economic Performance, Paris, France, January 21, 2002.

“Antitrust Issues Involving Intellectual Property,” Fall ABA Antitrust Forum on New Technologies/ New Administrations, Washington, D.C., November 14, 2001.

“Innovation Issues in U.S. Merger Policy,” Fordham Corporate Law Institute, New York, NY, October 25, 2001.

“The Future of Energy: Policy and Use in the 21st Century,” World Conference Group, University of Chicago, Chicago, October 13, 2001.

“Economics, Law, and History of Patent Pools and Cross-Licensing Arrangements,” Franco-American Conference on the Economics, Law, and History of Intellectual Property Rights, University of California, Berkeley, October 6, 2001.

“Vertical Integration in Gasoline Supply: An Empirical Test of Raising Rivals' Costs” (with Justine Hastings), presented at the University of California Industrial Organization Seminar, April 10, 2001. Also presented at the conference of the International Society for New Institutional Economics, Berkeley, CA, September 15, 2001.

“Is Innovation ‘King’ at the Antitrust Agencies?,” American Bar Association Spring Antitrust Conference, Washington, D.C., March 28, 2001.

“Is Innovation ‘King’ at the Antitrust Agencies?,” Conference on Beyond Microsoft: Innovation and Intellectual Property, University of California at Berkeley, March 2-3, 2001.

“Mutually Assured Destruction: Implications for Ag-Bio Licensing,” Conference on Intellectual Property Clearinghouse Mechanisms for Agriculture,” University of California at Berkeley, February 16, 2001.

Moderator, Panel on Economic and Regulatory Issues, Conference on Regulating on the Technological Edge, University of California at Berkeley, October 19-20, 2000.

Live interview with Joe Oliver on gasoline prices, KRON Bay TV, October 9, 2000.

“Antitrust and Innovation Post-IP Guidelines, Conference on Antitrust and Intellectual Property” The Crossroads,” San Francisco, June 1, 2000.

“Innovation and Foreclosure in a Market for Systems,” Industrial Organization Workshop, Cornell University, Ithaca, NY, April 26, 2000.

“Competition Issues in Biotechnology,” Conference on Intellectual Property and Global Biotechnology, Rockefeller Foundation, Bellagio, Italy, March 30, 2000.

“Intellectual Property and Competition Policy,” National Research Council Science, Technology and Economic Policy Conference, Washington, D.C., February 2-3, 2000.

Live interview with Michael Krazny on the Microsoft case, KQED Forum, January 17, 2000.

“Technology, Antitrust, and the Presidency,” The Presidency and Macroeconomic Policy

Conference, Miller Center of Public Affairs, University of Virginia, October 16, 1999.

“A Rent-Grabbing Theory of Tying,” Fifth Annual Berkeley-Stanford Conference in Industrial Organization, University of California, October 9, 1999.

“Antitrust Policy in a Small Open Economy,” Tel Aviv University, May 27, 1999.

“Exclusive Dealing, Preferential Dealing, and Dynamic Efficiency,” Conference on Antitrust and Regulation, Tel Aviv University, May 26, 1999.

“Merger Reviews in the Telecommunications and Media Industries,” Annual Spring Meeting of the ABA Section of Antitrust Law, Washington, D.C., April 14, 1999.

“Defining the Boundary Between Legitimate Cooperation and Illegal Collusion,” The Conference Board 1999 Antitrust Conference, New York, N.Y., March 4, 1999.

“The Intersection of Antitrust and Intellectual Property,” Conference on Antitrust Issues in High-Tech Industries, Scottsdale, AZ, February 26, 1999.

“Economic Analysis of Antitrust Rules and Intellectual Property,” Conference on Antitrust in the High-Tech Industry, Menlo Park, CA, February 23, 1999.

“Evaluating the Loss of Potential Competition From ILEC Mergers,” FCC Roundtable on the Economics of Mergers Between Large ILECs, Washington, D.C., February 5, 1999.

“Economic Factors in the Production, Dissemination, and Use of Scientific Databases,” National Research Council Workshop on Promoting Access to Scientific and Technical Data for the Public Interest,” Washington, D.C., January 14-15, 1999.

“Exclusive Dealing, Preferential Dealing, and Dynamic Efficiency,” 25th Anniversary Seminar of the Economic Policy Office/Economic Analysis Group, Antitrust Division, U.S. Department of Justice, Washington, D.C., November 6, 1998.

“The Microsoft Case: Antitrust for the 21st Century?” San Diego Business Round Table, San Diego, CA, October 23, 1998.

“Exclusive Dealing and Antitrust Policy,” Department of Economics, University of California at San Diego, San Diego, CA, October 22, 1998.

“Antitrust Policy for the Computer Industry,” Microprocessor Forum, San Jose, CA, October 14, 1998.

“Incorporating Economic Principles in Intellectual Property Damages,” conference on The Economic Analysis of Intellectual Property Damages, San Francisco, CA, October 2, 1998.

“Antitrust Issues in the Licensing of Intellectual Property,” (paper presentation and roundtable discussion leader), European Summer Symposium in Economic Theory, Gerzensee, Switzerland, June 29-July 4, 1998.

“Antitrust Issues in the Licensing of Intellectual Property: Microsoft Meets Contract

Theory,” (paper presentation and roundtable discussion leader), Conference on Regulation and Competition in Network Industries, June 5-6, 1998, Barcelona, Spain.

Discussant of Licensing in the Chemical Industry, Conference on Intellectual Property, Stanford University, April 17-18, 1998.

“Antitrust in High Technology Markets,” speech before the Peninsula Intellectual Property Law Association, Palo Alto, CA, March 24, 1998.

Session Moderator on the Current Regulatory Environment, Conference on Telecommunications Incentives to Invest in Advanced Infrastructure, University of California at Berkeley, March 20, 1998.

“Identifying Limits on Relations Among Rivals,” presented at the Conference Board 1998 Antitrust Conference, New York, NY, March 5, 1998.

“The DOJ/FTC Antitrust Guidelines for the Licensing of Intellectual Property,” invited lecture, Boalt School of Law, University of California at Berkeley, February 4, 1998.

“Antitrust in High Technology Markets,” speech before the Intellectual Property Institute, San Francisco, CA, January 26, 1998.

“Comments on the Antitrust Treatment of Joint Ventures,” invited participant in Federal Trade Commission Roundtable on per se illegality and rule of reason analysis of joint ventures, Washington D.C., December 12, 1997.

“Standards for Evaluating Market Power in Electricity,” California ISO Market Power and Monitoring Workshop, Oakland, CA, November 18, 1997.

“Antitrust Issues in the Licensing of Intellectual Property,” invited lecture, Boalt School of Law, University of California at Berkeley, November 13, 1997.

“Antitrust Issues and the Licensing of Intellectual Property,” Third Annual Berkeley-Stanford Conference in Industrial Organization, Berkeley, CA, October 18, 1997.

“The Microsoft Antitrust Wars,” invited lecture, Public Policy School, University of California at Berkeley, October 14, 1997.

“Electricity Merger Analysis: Does the FERC Follow the Merger Guidelines?” IAEE Annual Conference, San Francisco, CA, September 8, 1997.

“Networks and Bottlenecks,” conference on Bridging Digital Technologies and Regulatory Paradigms, University of California at Berkeley, June 27, 1997.

“Unilateral Effects Analysis: Vertical Competition Issues in Telecommunications,” conference on Competition Policy in Communications Industries: New Antitrust Approaches, Washington, D.C., March 10-11, 1997.

“Can Electricity Markets Be Competitive?” conference on Market Power and Competition in Electricity, Washington, D.C., February 27-28, 1997.

“An Economic Analysis of Unilateral Refusals to License Intellectual Property,” New York University School of Law, February 6, 1997.

“Competition Policy in the High-Tech, Global Marketplace,” Meeting of the American Economics Association, New Orleans, January 5, 1997.

“The Role of the State Public Utilities Regulatory Commission in Competition Policy,” remarks before the Staff Subcommittee for NARUC on Strategic Issues, San Francisco, November 18, 1996.

“Economic Issues Copyright Protection: the Lotus v. Borland Case,” National Bureau of Economic Research Summer Institute, Cambridge, MA, July 23, 1996.

“Unilateral Refusals to License Intellectual Property and International Competition Policy,” conference on “Competition Policies for an Integrated World Economy,” Oslo, Norway, June 14, 1996.

“Applying the Merger Guidelines to Electricity Mergers,” Conference of Public Utility Counsel, San Francisco, CA, May 17, 1996.

“The US DOJ/FTC Intellectual Property Guidelines,” invited address at the conference on “Competition Policy, Intellectual Property Rights, and International Economic Integration,” Ottawa, Canada, May 12, 1996.

“Competition Issues Related to Software Patents,” Berkeley Roundtable on Software Innovation, Berkeley, CA, April 26, 1996.

Moderator, “Panel on *Image Technical Services v. Eastman Kodak*,” San Francisco Bar Association, San Francisco, CA, April 26, 1996.

“Economic Perspectives on Compulsory Licensing of Intellectual Property,” American Bar Association Spring Antitrust Meeting, March 27, 1996, Washington, D.C.

Panel Discussant, “The 1995 Guidelines for the Licensing of Intellectual Property,” High Technology Section of the Santa Clara Bar Association, Santa Clara, CA, February 7, 1996.

“Microeconomic Analysis in Government Policy,” American Economic Association Annual Meeting, San Francisco, CA, January 5, 1996.

“Analysis of Market Power in the Computer Industry,” Chinese Government Official Training Program, Biltmore Hotel, Santa Clara, CA, December 8, 1995.

“Antitrust Evaluation of Electric Utility Mergers,” The Third DOE-NARUC National Electricity Forum, Washington, D.C., December 5, 1995.

“Responding to Structural Change: A Call for a Review of the Competitive Consequences of Hospital Mergers,” en banc testimony before the Federal Trade Commission Hearings on Global and Innovation-Based Competition, Washington, D.C., November 14, 1995.

“Economic Perspectives on Compulsory Licensing of Intellectual Property,” presented at the 3rd Annual Golden State Antitrust and Trade Regulation Institute, San Francisco, CA, October 27, 1995.

“Comments on the Use and Misuse of Innovation Market Analysis,” en banc testimony before the Federal Trade Commission Hearings on Global and Innovation-Based Competition, Washington, D.C., October 25, 1995.

“An Economic Analysis of Unilateral Refusals to License Intellectual Property,” presented at the National Academy of Sciences Colloquium on Science, Technology and the Economy, Irvine, CA, October 20-22, 1995.

“Discussion of ‘Restructuring and Regulatory Reform in Network Industries; from Hierarchies to Markets’,” by Paul Joskow, presented at the conference on Firms, Markets and Hierarchies, Berkeley, CA, October 6-8, 1995.

“Compulsory Licensing: Practical Facts and Economic Musings,” American Bar Association Section of Antitrust Law, Annual Meeting, Chicago, IL, August 8, 1995. Also presented at Intellectual Property Antitrust 1995, Practising Law Institute, San Francisco, CA, July 20, 1995.

“Joint Venture Access Rules: An Antitrust Evaluation,” American Bar Association Section of Antitrust Law, Annual Meeting, Chicago, IL, August 7, 1995.

“Competition in Electric Power Generation: Market Power and Market Pricing,” Harvard Electricity Policy Group, Cambridge, MA, April 18, 1995.

“The 1995 Antitrust Guidelines for the Licensing of Intellectual Property: New Signposts for the Intersection of Intellectual Property and the Antitrust Laws,” American Bar Association Section of Antitrust Law Spring Meeting, Washington, D.C., April 4, 1995. Also presented at The Aerospace Industries Association, Washington, D.C., April 20, 1995; The Fordham International Antitrust Conference, New York, NY, April 21, 1995.

“The Antitrust Agenda in the Clinton Administration,” American Bar Association Business Law Section, March 24, 1995.

“The New Federal Antitrust Licensing Guidelines: The Music Behind the Words,” Price Waterhouse Intellectual Property Conference, Tucson, AZ, February 23, 1995.

“Intellectual Property and the Antitrust Laws: Protecting Innovators and Innovation,” Annual Winter Meeting of the Licensing Executives Society, Phoenix, AZ, February 17, 1995. Also presented at The Conference Board, New York, NY, March 2, 1995; The Antitrust '95 Conference, Washington, D.C., March 15, 1995.

“Traditional Antitrust for Non-Traditional Markets: The Case of High-Tech and Intellectual Property,” American Bar Association Conference, Washington, D.C., November 17, 1994.

Interview in *Competition*, The Journal of the Antitrust and Trade Regulation Law Section of the State Bar of California, Vol. 4, No. 2, Fall 1994.

"The Antitrust Division Guidelines for Intellectual Property," Licensing Executives Society Annual Meeting, Crystal City, VA, September 12, 1994. Also presented at the Federal Bar Association, Washington, D.C., September 13, 1994; The Golden State Antitrust and Trade Regulation Institute, Los Angeles, CA, October 6, 1994; The Antitrust Conference, Washington, D.C., October 12, 1994; The American Intellectual Property Law Association, Washington, D.C., October 28, 1994; The Intellectual Property Owners Association, Washington, D.C., December 5, 1994; The New York State Bar Association, New York, NY, January 26, 1995.

"The Antitrust Division 1994 Intellectual Property Guidelines," ABA Antitrust Section, Amelia Island, FL, August 11, 1994.

"Emerging Issues in Intellectual Property Antitrust: Recent Antitrust Division Guidelines for Intellectual Property," ABA Annual Meeting, Antitrust Section, New Orleans, LA, August 9, 1994.

"Antitrust Issues Confronting High-Technology Companies in a Converging Industries Information Age: Mergers, Joint Ventures, Strategic Alliances," ABA Annual Meeting, Antitrust Section, New Orleans, LA, August 8, 1994.

"The Clinton Administration's Views on the Application of the Antitrust Laws to Intellectual Property, Technology Exploitation, and Innovation," Practising Law Institute, San Francisco, CA, July 15, 1994.

"Antitrust Policy in High Technology Markets: A View from the Antitrust Division," D.C. Bar Trade Regulation and Intellectual Property Committees, Washington, D.C., June 15, 1994; also presented at the D.C. Bar Association's Patent, Trademark, Copyright Section Annual Luncheon, Washington, D.C., June 21, 1994.

"The Use of Innovation Markets in Merger Analysis," Conference on Post-Chicago Economics, Washington, D.C., May 26, 1994.

"Antitrust and Regional Electricity Transmission Groups," Program on Workable Energy Regulation Annual Conference, Oakland, CA, May 19, 1994.

"The Antitrust Division Intellectual Property Task Force," American Intellectual Property Law Association, Cleveland, OH, April 22, 1994.

"Antitrust Issues in Patent Infringement Litigation: The Antitrust Counterattack," ABA Section of Antitrust Law 42nd Annual Spring Meeting, Washington, D.C., April 7, 1994.

"The Licensing of Intellectual Property," presented at San Francisco Patent and Trademark Law Association, San Francisco, CA, March 19, 1994.

"Intellectual Property," Law & Technology Seminar Workshop, Boalt School of Law,

University of California, Berkeley, CA, March 16, 1994.

Statement submitted to the Subcommittee on Patents, Copyrights and Trademarks, Committee of the Judiciary, United States Senate, Concerning the Patent Term Publication Reform Act of 1994, March 9, 1994.

“Product Distribution Arrangements: Legal and Economic Issues,” The Conference Board, New York, NY, March 3, 1994.

“Intellectual Property Licensing Issues: A View from the Antitrust Division,” Practising Law Institute, New York, NY, March 1, 1994; also presented at San Francisco, CA, April 8, 1994.

“Mergers in High Technology Industries,” presented at the Antitrust Practice Group, San Francisco, CA, February 4, 1994.

“Antitrust Policy in High Technology Markets,” presented at the Conference of the Association of American Law Schools, Orlando, FL, January 7, 1994.

“An Equilibrium Theory of Rationing,” presented at the Federal Trade Commission, Washington, D.C., November 17, 1993.

“Electric Power Regulatory Developments in the U.S.,” presented at the POWER Conference on International Comparisons of Electricity Regulation, Toulouse, May 1993.

“A Review and Analysis of Electric Utility Conservation Incentives,” presented at the POWER Conference on the Economics of Energy Conservation, Berkeley, June 1992.

“Asymmetric Gasoline Price Responses to Crude Oil Price Changes,” presented at the NBER Conference on Industrial Organization, Boston, December 6, 1991.

“Do We Need a National Energy Strategy?” invited comments before the Subcommittee on Economic Stabilization, Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives, October 17, 1991.

“Developments in Electricity Regulation,” presented at the Latin American Meetings of the Econometrics Society, Montevideo, Uruguay, August 28, 1991.

Comments on the outlook for petroleum prices, KPIX-TV, January 15, 1991.

Comments on the petroleum industry, Public Radio Broadcasting Network, September 3, 1990.

“Developments in Energy Regulation,” Conference on Bidding for Electric Power, Davis, Ca, March 1990.

“Pricing Delegation in Shared ATM Networks,” Annenberg Conference on Electronic Service Networks, February 1990.

“Outlook for Competition in Electric Power Markets,” California Public Utility

Commission, February 1990.

“Progress of Deregulation in the U.S.,” Montevideo, Uruguay and Buenos Aires, Argentina, August 1989.

“Entry vs. Acquisition,” Harvard University, March 1989; also presented at U.S. Department of Justice, October 1988.

“The Role of Potential Competition in Industrial Organization,” invited lecture, Bank of San Paolo, Turin, Italy, June 1988.

“Competition in Electric Power Markets,” Executive Seminar on Utility Regulation, University of California, Berkeley, June 1988.

“Multiproduct Competition,” presented at University of California, April 1988. Also presented at Stanford University, May 1988, University of Florence, June 1988.

“Rate Reform in Competitive Electric Power Markets,” presented at the Management Institute of Berlin, May 1987.

“Lectures in the Theory of Economic Regulation,” presented at the Autonomous University of Barcelona, May 1987. Also presented at the Stockholm School of Economics, June 1987.

En Banc Testimony before the California Public Utilities Commission on revising rate-making mechanisms for electric utilities, March 1987.

“The Nuclear Industry After Chernobyl,” University Explorer Series #860630, June 30, 1986.

BACKGROUND

Born January 14, 1945

Married (Sandra), two children (Alison, David)

U.S. citizen

March 2004