

Wireless: Can Regulatory "Business as Usual" Continue?

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Despite the fact that nearly half of all Americans own wireless phones, the wireless industry faces a financial crisis. Americans not only have many national and local mobile wireless service providers to choose from, but the geographic reach and competitiveness of domestic wireless network coverage is impressive.¹ The total number of wireless minutes likely will overtake the total number of wired telephone minutes in the United States. Wireless phones have gained new prominence as a result of the critical role they played in reestablishing communications on September 11, 2001, and have moved to the forefront of national emergency planning, national security, and priority access regimes.

The financial condition of the wireless industry does not reflect the 137.5 million subscribers in the United States who use their cell phones and other wireless devices daily.² Billions in equity from investors and in debt funded by Wall Street have been spent to build out wireless networks and to provide service.³ The second quarter 2002 earnings report for Nextel Communications, Inc., was considered a watershed for the industry because profits are a unique achievement among the competing carriers.⁴ Only recently have telecommunications analysts predicted that some of the major operators will finally turn free cash flow positive.⁵ Although some financial analysts recently upgraded their ratings of a few wireless carriers,⁶ the industry itself is in a classic early stage and has yet to mature and produce the hoped-for financial payoff.

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From a public policy perspective, in contrast, the industry has wildly exceeded expectations for growth in reach, consumer acceptance, and competition. The Federal Communications Commission (FCC) has been quick to saddle this still-nascent industry with costly mandates without considering the impact of their implementation on the carriers' financial future. While the FCC recently relieved some wireless carriers from their commitment to pay for licenses bought at auction in more prosperous times, the Commission needs to do more to ensure that the wireless industry can fulfill its potential as a true facilities-based competitor to landline carriers.

The financial community has been disenchanted with the telecommunications sector as a whole, but the wireless industry has suffered in particular. This is disturbing because wireless carriers provide consumers with the only real service alternative to the well-entrenched local telephone industry. Wireless service has features that distinguish it from the rash of carriers that sprang up after the 1996 Telecommunications Act passed and died once the Internet bubble burst.⁷ First, most wireless service providers are facilities-based operations that provide service on a regional or national basis. Second, from the inception of commercial wireless services (also known as commercial mobile radio service or CMRS), these new entrants were required to make significant upfront investments in spectrum and infrastructure before offering services to any customers. For example, it costs about \$250,000 to build a typical small cell site covering an area of approximately five miles.⁸

These costs are in addition to extensive operational expenses, not to mention the fees that wireless carriers are required to pay incumbent local exchange carriers (ILECs) for the interconnections necessary to complete calls to landline customers. Initially, consumers, Wall Street, and the FCC wanted coverage on

a regional and even national basis. This kind of coverage requires the generation of enormous debt that is not quickly and easily extinguished. Wireless carriers have delivered what consumers and federal policymakers said that they wanted. So why are financial markets still so unhappy with them?

A review of the market challenges and the current state of the industry suggests that wireless carriers have fallen victim to a premature success mentality. Recent regulatory policies appear to assume incorrectly that CMRS carriers have "arrived" and, therefore, they should bear an ever-increasing burden of supporting a wide range of social policies.⁹ If the industry is to survive and realize its full potential, communications policymakers need to demonstrate more sensitivity to current financial realities, starting with the unstated assumption that the wireless industry is the untethered equivalent of the landline telephone industry. Blind application of regulatory policies, however well intentioned, and the imposition of expensive requirements on wireless carriers will ensure their demise, leaving only wireless rubble in the wake of the bubble.

Where's the Profit?

In the mid-1990s, the market looked extremely promising for wireless carriers. Industry analysts forecast unlimited demand for data and voice services. Wall Street interest and funding were available to give wireless providers the jump-start necessary to build networks and consolidate fragmented service areas. The FCC played into the buzz about wireless technology by auctioning spectrum for new wireless services. As more spectrum came on the market, would-be investors, expecting that the wireless appetite for data would be insatiable, began to focus on the potential for six or more competitors in any given market. However, expansion of the new subscriber base slowed,¹⁰ resulting in a renewed attention to the debt load of

wireless carriers and the additional network costs necessary to keep the industry as a whole operational. New regulatory mandates soon materialized.

After the Internet and wireline competitive local exchange carrier (CLEC) implosion, there are more questions about carrier viability today and less capital available to build and upgrade wireless networks. The U.S. wireless industry has already spent, or has committed to spend, approximately \$10 billion on third-generation, or 3G, advanced services network upgrades.¹¹ In the midst of the Internet boom, it was hard to imagine that the wireless industry's venture into 3G may have been premature. Nevertheless, only about 12 million of the approximately 139 million wireless phone users in the United States use their mobile phones to access data.¹²

Since 1993, Congress has espoused a policy goal of stimulating competition between wireless and wireline telecommunications services. There are, however, significant economic barriers to full outright substitution, including heavy subsidies of landline local phone service. Only with the widespread adoption of "all you can eat" pricing plans are wireless subscribers beginning to use their wireless phones to make long distance calls and replacing their second or third landline phones with wireless alternatives.

As FCC Chairman Michael K. Powell recently observed, the market is the principal driver for economic growth.¹³ The path to wireless industry growth is not obvious, although Wall Street apparently believes that consolidation of existing carriers offers the most promising route to financial success. And while consolidation remains the buzzword, wireless carriers and Wall Street may be unwilling to consolidate until the carriers retire their existing debt.

In addition, spectrum values are depressed and capital markets remain largely closed to wireless carriers. The NextWave auction debacle is the most visible demonstration that wireless spectrum has cycles of valuation strong enough to shake the foundations of the industry. In 1996, NextWave Wireless Telecom, Inc., submitted winning bids totaling \$4.7 billion for dozens of personal communications services (PCS) licenses in major U.S. markets. Before paying its bid prices in full, NextWave filed for bankruptcy and sought to restructure its FCC license debt. When the

FCC used its regulatory licensing authority to repossess and resell the licenses at auction, the Commission reaped \$16 billion—nearly half of which was bid by Verizon Wireless—from the sale of the PCS licenses from NextWave and other bankrupt entities. The results of this re-auction remain unsettled. When the D.C. Circuit reversed the FCC's decision not to reconsider its prior announcement that NextWave's licenses had been cancelled,¹⁴ the FCC conditionally reinstated NextWave's licenses. As expected, the FCC, joined by wireless carriers, filed for certiorari to the Supreme Court,¹⁵ which heard oral arguments on October 8, 2002. The ultimate fate of these licenses may be resolved this winter.

Citing the challenging market conditions faced by wireless carriers, the FCC recently decided to allow companies to opt out of their billions in auction payment obligations for licenses reclaimed from NextWave and another bankrupt company. Emphasizing that it was not legally obligated to provide the relief, the FCC said it was doing so because it "recognized that the telecommunications sector is currently weathering economic conditions that threaten negative effects for consumers."¹⁶ The FCC also noted that "mounting debt loads and constricted capital markets" have already made it difficult, if not impossible, for telecommunications providers to deploy new services.¹⁷ Such a move is encouraging to those wireless carriers that have had their conditional FCC debt purged, but it remains to be seen whether the FCC will take these financial considerations into account when implementing regulatory mandates that impose enormous continuing costs on the wireless industry as a whole.

The prime indicator of a company's financial health usually lies in its profit statements. However, it is unrealistic to expect wireless carriers, as part of an early-stage industry with enormous capital and start-up costs, to show a profit. During the early days of wireless technology, Wall Street typically looked to earnings before interest, taxes, depreciation, and amortization (EBITDA) as a preprofit indication of financial performance. During the Internet boom, EBITDA was often used to measure increasing "earnings capacity" in companies with large capital expenditures.¹⁸ The financial community also used EBITDA as a perform-

ance measure to pressure wireless carriers into expanding coverage and thereby gain new customers. Now that wireless carriers have made substantial investments in expanding their networks, wireless analysts have discarded EBITDA and instead want to see wireless companies profitable, or at least in a free cash flow positive position. This change in perspective can partly be explained by Wall Street's evolving view of the approximately \$97 billion debt carried by the industry as a whole,¹⁹ thereby dampening enthusiasm for future plans by all wireless carriers to merge or offer new services that require significant network investment.

In this harsher financial environment, Wall Street punishes wireless carriers when the anticipated growth in subscribers falls below carrier projections, or when customers cut their usage or drop service entirely. Moreover, not every new wireless subscriber is as desirable as the last subscriber. Many newer wireless subscribers fail to generate the kind of money spent by early users who were fascinated with the new technology. Sprint PCS, for example, recently experienced a significant setback in financial performance with the introduction of its "Clear Pay" service offering. Although the pricing plan attracted many new subscribers, many failed to pay their bills and had to be dropped. As a result, Sprint PCS is expecting to reduce the number of subscribers this year.²⁰ Thus, because higher numbers do not automatically lead to profitability, rapid growth in subscribers no longer moves the financial community.

Where's the Vision?

Despite these disturbing circumstances, federal regulators have yet to demonstrate an agenda for wireless carriers that responds to the signals transmitted by the capital markets. In fact, FCC Chairman Powell has told Congress and Wall Street that it is the ILECs, i.e., the carriers with overwhelming market power, that need regulatory relief during the current regulatory downturn. In his July 2002 testimony before the Senate Commerce Committee, Powell said that "the cold fact remains that the economic foundations remain weak in local markets."²¹ He argued that local telephone companies have "little pricing flexibility for retail services" and urged that the FCC and its state counterparts work together to improve this situation through regulatory reform.²²

In sharp contrast, Powell's response to malaise in the wireless industry focused on the perceived need for consolidation. He noted that "to address overcapacity, hyper-competition, weak pricing power and falling revenues, many sectors of the industry must undergo some prudent restructuring."²³ While financial analysts continue to debate the merits of consolidation,²⁴ however, such rhetoric buries the real headlines and the great promise of wireless technology as a viable facilities-based competitor to landline services. For regulators, this should translate into a question of whether there may be regulatory mandates that unduly harm wireless as an emerging competitive force.

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The FCC must maintain the promotion of facilities-based competition as an important factor in its telecommunications policies. Specifically, the FCC must not undermine the potential for competition by exacerbating the already negative financial situation of wireless carriers. Indeed, the most damaging trend to the general health and welfare of wireless carriers is the sheer number and expense of the regulatory mandates now imposed on them. These include implementing telephone number conservation measures, such as number pooling; allowing departing customers to take their wireless phone numbers with them; and implementing systems—both within networks and wireless handsets—to provide location information with pinpoint accuracy for every wireless call to 911 (known as Enhanced-911 or E911). The list does not end there. Wireless carriers are obliged to pay into federal and state funds to support ILECs to encourage affordable landline universal service and telecommunications relay services for the hearing impaired. Compliance with the Communications Assistance for Law Enforcement Act and enhanced surveillance with requirements in cooperation with law enforcement also have added costs.

While each program or mandate of-

fers public benefits, the drag on demand for wireless service that these programs create can no longer be ignored.

Regulatory requirements and payments for E-911 and other worthwhile programs can lead to significant surcharges on customer bills that, together with taxes, often reach as high as 25 percent to 35 percent in some cases. These create substantial additional financial burdens for carriers, already under stress, at a time when capital is not available to pay for them. No matter how important the policy goal is, the cost of implementation at some point may well outweigh the benefits. Number portability, which allows customers to keep their wireless telephone numbers when they switch carriers, would cost the industry approximately \$1 billion during the first year of implementation and an additional \$500 million annually in successive years.²⁵ These costs inevitably are passed on to the consumer and inhibit wireless carriers from making

other choices, including investment in expanding service or technology research. Further, portability may add to the wireless market's volatility by removing a significant disincentive for customers to change carriers, and raise even more questions by the investment community about the ability of wireless carriers to pay down their debt.

Another important—and expensive—social policy is the accessibility of affordable telephone service for all who want it, known in shorthand form as universal service. Before the 1996 Act was passed, interexchange carriers paid ILECs access charges on a per-minute basis to use local LEC networks. These access charges were inflated, and there were other implicit cross-subsidies, such as business supporting residential line costs, that kept universal service afloat. The 1996 Act set forth an entirely new regime in which all telecommunications carriers and some providers of telecommunications capacity were directed to pay the costs of the universal service fund (USF).²⁶ In 2001, wireless carriers paid approximately 14 percent of the total federal USF, in addition to contributing to various state USF programs.²⁷ These costs are most often passed through to the wireless

subscriber in the form of a surcharge on customer bills.

While customers in rural and other high-cost areas are the indirect beneficiaries of the universal service program, the ILECs are the direct beneficiaries of the program's largesse. In fully 97 percent of the cases, the funds collected from all interstate telecommunications carriers go directly to incumbent, mostly rural, telephone companies. Section 254 of the 1996 Act requires portability of support to new competitors that qualify for eligible status, but new competitors, including wireless carriers, serve very few supported lines.²⁸

Both wireless and wireline carriers must recover the cost of USF, but these costs disproportionately harm wireless carriers. Indeed, consumers are more likely to pay such an added expense on a landline phone bill because they see few alternatives. In contrast, most wireless phone users would go without a wireless device if they see added charges on their bills without any perceived added benefit. Thus, because the demand for wireless service in the face of increased cost is far more elastic than the demand for landline local service, wireless carriers risk losing revenue for every USF and other mandated charge passed through to the customer. Lost revenues make the challenge of reaching a free cash flow positive state even more daunting.

Perhaps the FCC's most expensive mandate for wireless carriers involves the second phase of E911 implementation. Under Phase II of the FCC's E911 rules, wireless carriers, depending upon the technology selected, will have to locate wireless phones within 50 meters 66 percent of the time or within 150 meters 95 percent of the time. The FCC adopted these rigorous location requirements despite the fact that no technology existed at the time to pinpoint locations with such high levels of accuracy.²⁹ Wireless carriers were initially to begin delivering Phase II information to all public safety answering points (PSAPs) that were ready by October 1, 2001. The FCC had to revise its ambitious timetable because it underestimated the time, technical challenges, and costs of providing Phase II location data. However, rather than granting relief to all carriers based on the unavailability of compliant technology, the FCC required each carrier to file an individual waiver demonstrating its need

for more time. New timetables require wireless carriers to have everything in place by the end of 2005, regardless of the readiness of PSAPs and ILECs to use Phase II location information.

Even when wireless carriers are able to provide Phase II data, these data are useless to 911 call centers that have not yet completed the necessary upgrades to receive and use the location information. These upgrades are expensive for PSAPs, many of which need significant additional funding to upgrade computers, to purchase mapping software, and to upgrade existing systems. In addition, for E911 to work as envisaged, ILECs also need to upgrade databases that contain critical location information about the caller. Many ILECs have yet to perform these upgrades.

A recent report to the FCC on E911 implementation proved that wireless carrier concerns about coordination and readiness issues were well founded. The FCC asked the former director of the Office of Engineering and Technology to evaluate whether PSAPs and ILECs were performing the necessary upgrades for timely E911 implementation. The report concluded that unless corrective steps are taken, the rollout of wireless E911 services would be constrained by "PSAP fatigue."³⁰ Even when all sides make good-faith efforts, PSAP awareness and readiness remains a potential block to the rapid and efficient rollout of wireless E911 services.³¹ The report made a similar finding about ILEC upgrades, concluding that the major impediment to a successful rollout are the prices charged by ILECs for upgrading their existing wireline E911 networks to support wireless E911. Despite these findings, some ILECs have suggested that wireless carriers should be responsible for paying for these ILEC network upgrades.³²

Many different pieces of the E911 puzzle must mesh before Phase II can be successfully deployed. There is, however, one glaring implementation problem that creates perverse disincentives: only wireless carriers will be deemed noncompliant if E911 deadlines are not met.³³ The FCC has stated that assertions that vendors, manufacturers, and other providers cannot supply necessary products would not excuse failure to comply. Thus, wireless carriers are deprived of any real opportunity to counter an FCC finding of noncompliance. In reality, however, wireless carriers have no con-

trol over what equipment manufacturers are capable of creating and producing, but they face potential liability and FCC fines when their vendors cannot deliver goods as promised.

No one can dispute the potential value of location information to enable emergency personnel to come to someone's rescue more quickly. But the FCC is not acting in the public interest by failing to examine whether alternative E-911 implementation plans, such as an extended implementation timetable or other deployment flexibility, would allow wireless carriers to fulfill the E911 program objectives without depleting their own financial resources.

The cost of implementing FCC regulations inevitably affects the competitive viability of wireless carriers and how Wall Street and potential investors view them. Why invest in a company that may face heavy fines because of something its equipment vendors could not produce? Why invest in carriers that must pay to implement number portability, which itself may lead to even higher levels of customer turnover than in today's market? Why invest in wireless carriers, which are already unprofitable operations, that are underwriting the high cost of profitable rural telephone companies? Given current market conditions, the FCC should be willing to work with wireless carriers to address some of these regulatory burdens.

Sustainable Competition Remains Elusive

As this discussion suggests, the benefits and the burdens of operating in the telecommunications market are not falling evenly among classes of carriers. This is the challenge posed by treating all carriers alike: symmetric regulation will not work where carriers are not in the same businesses. The demand for wireless service is considerably more elastic than the demand for a primary residential telephone line. Every time wireless carriers are required to operate under an additional federal mandate, they move further away from paying off their debt and becoming profitable. Even ignoring the problem of whether federal policies have fostered a situation where multiple wireless carriers cannot be viable, a broader

public policy issue is at stake: The hope of real competition between wireline and landline telecommunications companies is fading rapidly because of burdensome federal regulations.

The underlying policy goal of the 1996 Act was to increase local phone competition. That goal has yet to be substantially realized.³⁴ As wireline CLECs continue to declare bankruptcy and disappear, wireless carriers may prove to be the only viable source of mass-market competition to entrenched phone monopolies. Wireless service must be nurtured and advanced by the federal government, not impeded by the rote application of regulations. Indeed, the publicly beneficial regulatory mandates that are now so burdensome appear to have been based on the assumption that wireless networks would be revenue producing. But revenue that falls to the bottom line and allows the retirement of debt may be years from realization in the current wireless market.

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What limited consideration the FCC has given to the cost effects of these mandates on intermodal competition suggests that the FCC believes that the impact should be neutral, as costs would be passed through to customers. This, however, is not the case. Because competition among wireless carriers is vibrant and intense³⁵ wireless carriers have little choice but to pass through mandated costs to subscribers.

Wireless carriers have not, however, realized their full potential in competing with landline phone service. In fact, only 3 percent of telephone users have made wireless phones their primary phones. Moreover, as noted above, wireless service has a very different elasticity of demand than traditional landline service, revealing that some of these most basic neutrality assumptions are flawed. Cash strapped consumers are more likely to give up a wireless phone, considerably cutback on their wireless phone use or forego getting an additional wireless phone, rather than give up their landline telephone service. All of these options

mean reduced revenue for wireless carriers making it even more difficult for wireless carriers to pay down their debt. The bottom line is that mandates that at first blush may appear neutral in their effects may disproportionately affect industry segments with starkly different elasticities of demand.

Federal policymakers must pay closer attention to this demand elasticity phenomenon, as well as to the financial realities and the competitive consequences of their policies. If wireless carriers are not economically viable because of regulation, then the very social policies the FCC is seeking to achieve through E911, universal service and other programs may be threatened. Indeed, without viable wireless carriers, there is no entity available to offer E911 Phase II services, or to pay the costs of number portability and universal service programs. And the tenuous experiment with local telecommunications service competition from wireless carriers may be put at risk.

New ways of achieving important social policy have to be explored. If these mandates are important, then they should be funded from a less competitively distortive source. If all of society, for example, benefits from having affordable local phone connections in high cost rural areas, then the less competitively distortive way to fund it would be by direct congressional appropriation, not indirectly by imposing regulatory mandates on carriers that are charged inevitably to their customers. It is time for a new vision that prevents the wireless landscape from being littered with failed companies and maintains the potential for broad, facilities-based telecommunications competition. □

Endnotes

1. According to the Federal Communications Commission (FCC), 94 percent of the total U.S. population (268 million people) live in counties with access to three or more different operators offering mobile telephone service; 80 percent (229 million) are in counties with five or more; and 53 percent (151 million) have access to six competing service operators. See 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, *Seventh Report*, FCC 02-179, at 5 (released July 3, 2002), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-02-179A1.pdf (last visited Dec. 11, 2002).

2. Cellular Telecommunications and

Internet Association, available at www.wow-com.com (last visited Dec. 12, 2002).

3. By 2001, wireless carriers already had invested an estimated \$105 billion collectively in their networks. CELLULAR TELECOMMUNICATIONS & INTERNET ASSOCIATION SEMI ANNUAL WIRELESS INDUSTRY SURVEY, available at www.wow-com.com/industry/stats/surveys/ (last visited Oct. 10, 2002).

4. Bill Menezes, *What About 3Q?*, WIRELESS WK. ARTICLE, July 22, 2002.

5. MORGAN STANLEY, WIRELESS TELECOM SERVICES, A MUCH BETTER 2003: UPGRADING INDUSTRY VIEW, at 3 (Dec. 2, 2002).

6. *Id.* Despite more positive balance sheets, one analyst recently noted that the wireless sector's risk/reward ratio should be viewed unfavorably given the intense price competition, high fixed network costs and significant financial leverage among wireless carriers. Dan Meyer, *Rural, Affiliates Share Prices Rally; Analysts Don't Put Much Stock in Uptick*, RCR WIRELESS NEWS, Dec. 9, 2002, at 3.

7. Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (codified in scattered sections of 47 U.S.C.).

8. Joelle Tessler, *Big Deals Looming in Wireless World*, SAN JOSE MERCURY NEWS, Aug. 7, 2002.

9. *Wireless Growth Said to Create Crossroads for Regulators*, MOBILE COMMUNICATIONS REP., Feb. 18, 2002.

10. Although wireless subscriber growth was once as high as 50 percent annually, it has slowed to 8.4 percent and is forecast to stay near that level through 2005. Olga Kharif, *Waiting for Wireless Mergers*, BUS. WK. ONLINE, Oct. 11, 2002.

11. *Sprint PCS Launches Faster Wireless Network*, NEWSBYTES, Aug. 9, 2002.

12. *Id.*

13. Federal Communications Commission Chairman Michael K. Powell, Address at the Goldman Sachs Communicopia XI Conference (Oct. 2, 2002), at 3, available at www.fcc.gov/Daily_Releases/Daily_Business/2002/db1002/DOC-226929A1.pdf (last visited Dec. 11, 2002).

14. See NextWave Personal Communications, Inc., 254 F.3d 130 (D.C. Cir. 2001), cert. granted, 122 S. Ct. 1202 (2002).

15. *Id.*

16. Disposition of Down Payment and Pending Applications by Certain Winning Bidders in Auction No. 35, *Order and Order on Reconsideration*, FCC 02-311 ¶10 (released Nov. 14, 2002) (also noting loss of jobs, decline in market capitalization, and increase in bankruptcy filings).

17. *Id.*

18. Currently, wireless stocks trade around five times EBITDA. They have previously traded anywhere from seven to nine times EBITDA, and in the boom times they traded between ten and twelve times EBITDA or higher. *The Money Gang* (CNNfn television

broadcast, Sept. 9, 2002).

19. *Sprint Expects Loss of Subscribers*, WALL ST. J., Sept. 24, 2002, at A3.

20. *Id.*

21. *Financial Turmoil in the Telecommunications Marketplace; Maintaining the Operations of Essential Communications: Hearing Before the Senate Comm. on Commerce, Science and Transportation*, 107th Cong. 14 (July 30, 2002) (statement of Michael K. Powell, Chairman, Federal Communications Comm'n), available at www.senate.gov/~commerce/hearings/073102powell.pdf.

22. *Id.*

23. See Powell speech, *supra* note 12.

24. A minority of financial analysts have recently argued that while consolidation is likely, it is not essential to recovery in the wireless sector and that some, if not all, wireless carriers can reach free cash flow within the current industry structure. Industry consolidation, of course, would improve this free cash flow, lower leverage ratios, and reduce the cost of capital but are not a prerequisite to recovery in the sector. See MORGAN STANLEY, *supra* note 4, at 1 (Dec. 2, 2002).

25. Peter J. Howe, *FCC Mandate to be Hot Topic at Florida Cellular Telecommunications Meeting*, BOSTON GLOBE, Mar. 21, 2002.

26. In 2000, the Universal Service Administrative Co. (USAC) distributed more than \$2.2 billion in high-cost USF support, and more than \$2.6 billion in 2001. Applicants requested a total of \$5.195 billion in e-rate funding in 2001, exceeding the program's annual funding cap of \$2.25 billion. See UNIVERSAL SERVICE ADMINISTRATIVE CO., 2001 ANNUAL REPORT, available at www.universalservice.org/reports/2001/default.html (last visited Dec. 11, 2002).

27. Federal-State Joint Board on Universal Service, *Further Notice of Proposed Rule-making*, 17 FCC Rcd 3752, ¶ 59 (2002).

28. Competitive carriers served only 3 percent (approximately 500,000) of the more than 12 million lines that received high-cost support during the fourth quarter of 2002. See USAC 2002 4th Quarter Administrative Filings to the Federal Communications Commission, Appendix HC04—High Cost Loop Support by State by Study Area (2002), available at www.universalservice.org/overview/filings (last visited Oct. 10, 2002).

29. Some wireless carriers have chosen to use GPS handsets, others have chosen to install additional equipment on cell towers that can triangulate to provide location information. The wireless industry has collected monthly fees to pay for PSAP E-911 upgrades. As of June 2001, these payments to PSAPs are estimated to amount to \$700 million per year. Letter from Thomas E. Wheeler, President, Cellular Telecommunications & Internet Association, to the National Emergency Number Association and the

Association of Public-Safety Communications Officials International, Inc. (June 24, 2001).

30. DALE N. HATFIELD, A REPORT ON TECHNICAL AND OPERATIONAL ISSUES IMPACTING THE PROVISION OF WIRELESS ENHANCED 911 SERVICES, at iii (Oct. 15, 2002), *available at* http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6513296239.

31. *Id.*

32. *See* BellSouth, Written *Ex Parte*, CC Docket No. 94–102 (filed Aug. 23, 2002).

33. Verizon Wireless has asked the FCC to amend its rules to clarify that a wireless carrier is not in violation of an E911 implementation deadline when, as of that date, the PSAP could not yet receive and use Phase II location data because either the local exchange carrier or PSAP had not upgraded its facilities. The FCC currently has a strict liability standard in place whereby the wireless carrier is held to have violated FCC rules if it misses an implementation date due to causes beyond its control. *See* Verizon Wireless, Written *Ex Parte*, CC Docket No. 94–102 (filed Aug. 19, 2002).

34. Competitive local exchange carriers still provide less than 10 percent of the total market share for local telecommunications service. *See* ASS'N OF LOCAL TELECOMMUNICATIONS SERV., 2002 ANNUAL REPORT, at 8, *available at* www.alts.org (last visited Oct. 10, 2002).

35. The average wireless phone bill, for example, has dropped to \$55 a month from more than \$80 a month ten years ago. Joelle Tessler, *U.S. Cellular Phone Industry May See Round of Consolidation*, SAN JOSE MERCURY NEWS, Aug. 5, 2002.