

Box 6-2 — continued

By June 2003, this had grown to 88 percent. A recent study indicates that the introduction of satellite TV led to substantial gains for consumers. However, ongoing antitrust oversight of the pay TV industry remains important. In 2002, both the FCC and the DOJ acted to block the merger of the two primary satellite TV providers to prevent a loss of competition in pay TV services.

Telephone Service: A Natural Monopoly?

Natural monopoly arguments have traditionally offered a rationale for economic regulation of telephone service. It can be costly for entrants to reproduce the incumbent local networks of copper wires or “loops” that connect nearly every U.S. household to telephone service. Over the past two decades, however, the wireline (land line) telephone monopoly has yielded to encroaching competition from the entry of alternative suppliers of long-distance service in the 1980s, the explosive growth in mobile wireless telephone service over the past decade, and the recent introduction of voice communications over the Internet. Such proliferating competition has posed challenges to the economic regulation of telephone services.

Long-Distance Services

Prior to 1984, both local and long-distance telephone service in the United States was supplied primarily by a single firm, AT&T. As part of a 1982 antitrust settlement with the DOJ, AT&T was broken up in 1984 into a number of regional exchanges providing local service and one long-distance provider that retained the AT&T name. The breakup separated local telephone service, which remained rate-regulated because of its natural monopoly characteristics or for jurisdictional reasons, from long-distance service and equipment manufacturing—businesses viewed as potentially competitive. Thereafter, competition in long-distance service progressed with the entry and expansion of alternative providers.

Between 1984 and 2002, per-minute long-distance prices fell by more than 80 percent after adjusting for inflation. This resulted in part from the FCC lowering per-minute access charges on long-distance calls, savings that were passed through to long-distance customers as a result of the emerging competition among long-distance providers. At the same time, the proportion of

U.S. households connecting to local telephone service grew from 91.4 percent in 1984 to 93.3 percent in 1990. A study of telephone demand over this period found that much of this increased penetration in telephone service could be explained by the drop in long-distance prices. This reflects the fact that consumers value connecting to the local telephone network for the ability to place long-distance calls as well as local calls.

Goods tend to be supplied efficiently when prices reflect costs. If a price is higher than the true cost of supplying an additional unit of a good, too little of the good will be consumed relative to what would yield the greatest net benefits to consumers and producers. Telephone charges pegged to the volume of call traffic tend to discourage call volume. This can lead to less than efficient utilization of the telephone network, if price exceeds the network costs of putting through an additional call or minute of calling. By the same token, price reductions toward unit cost encourage more efficient utilization of the network and increase the value consumers derive from connecting to the network.

Mobile Wireless Telephone Services

Whatever the prospects for competition in telephone service may have been in decades past, substantial competition has emerged in recent years, and more is on the way. Mobile wireless telephone service has grown by nearly 26 percent annually, from 16 million subscribers in the United States in 1993 to more than 158 million in 2003 (Chart 6-4). Nationwide, 54 percent of the population subscribed to wireless service at the close of 2003. In contrast, nationwide wireline telephone penetration was nearly 95 percent in 2003, but the number of wireline telephone lines peaked in 2000, at 192.5 million lines, and fell by about 5 million lines over the next two years. Some of this decline likely reflects consumers choosing to switch from wireline to mobile wireless telephone service.

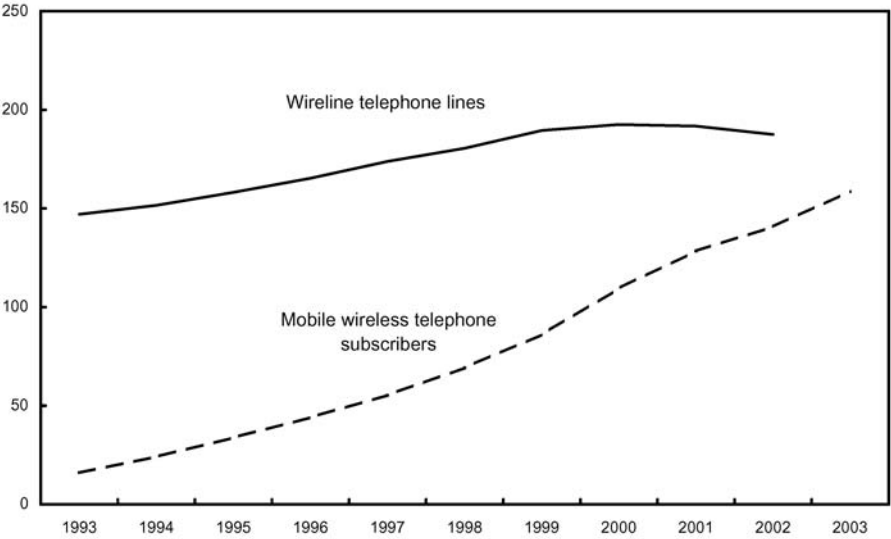
Compared to wireline service, wireless service offers the convenience of mobility and accessibility. Growing wireless penetration has been driven by a rapid drop in wireless prices. The average price per minute of mobile wireless telephone service fell from 47 cents in 1994 to about 11 cents in 2002 (Chart 6-5). Sharpening competition has helped drive the falling average price per minute of mobile wireless telephone service over the past decade.

Wireless telephone services are carried over radio spectrum. *Spectrum* generally refers to a broad range of frequencies of electromagnetic radiation, which encompasses visible light. Frequencies higher than those of visible light include ultraviolet light and x-rays, while lower frequencies include first infrared light and then, as wavelengths grow longer, radio waves. *Radio spectrum* refers to the lower range of frequencies, which carry broadcasting and mobile communications services. If two transmitters at the same geographic location were to use the same frequency at the same time, they would *interfere* with each other,

Chart 6-4 **U.S. Wireline and Mobile Wireless Telephone Service**

As wireless telephone service has grown rapidly, the number of traditional telephone lines has begun to decline.

Number (millions)

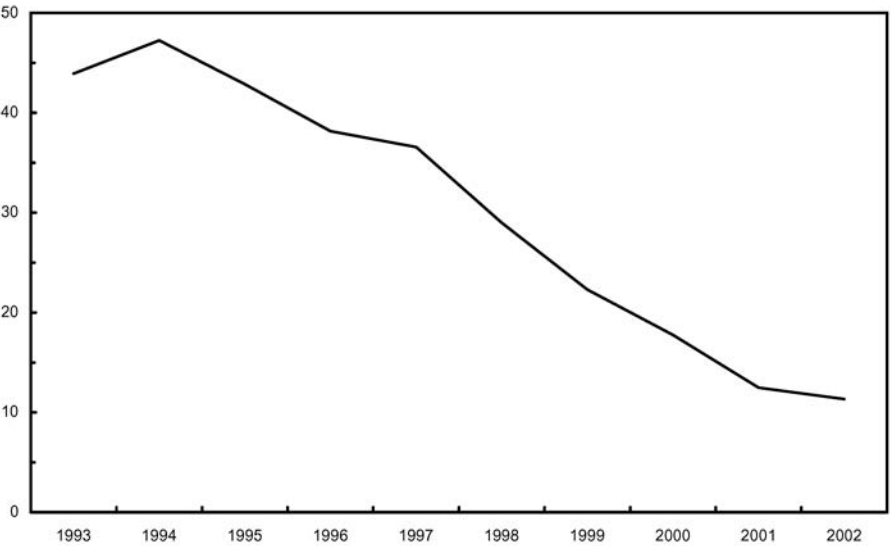


Source: Federal Communications Commission.

Chart 6-5 **Average Price Per Minute of Mobile Wireless Telephone Service**

The price of wireless service has fallen rapidly.

Cents per minute



Sources: Federal Communications Commission and Council of Economic Advisers.

garbling their transmissions. To limit such interference problems, the Federal government licenses rights to use specified bands of spectrum at specified locations. Federal government users of spectrum are licensed through the National Telecommunications and Information Administration (NTIA). All other spectrum users are licensed through the FCC.

In the early 1990s, government-issued spectrum licenses for wireless telephone service were limited to just two cellular providers in each cellular market area. A series of FCC-run auctions beginning in 1995 provided additional spectrum for digital personal communications services (PCS), enough to support as many as eight wireless providers. By the end of 1999, 88 percent of the Nation's population could choose from three or more wireless providers and 35 percent could choose from at least six. By the end of 2003, these figures were up to 97 percent and 76 percent, respectively.

Talking on the Internet: Voice over Internet Protocol

Local exchange telephone networks are facing growing competition from Internet-based telephone services. Unlike traditional circuit-switched telephone calls, communications using Voice over Internet Protocol (VoIP) break the call stream into data packets sent over the Internet, turning your computer into an alternative to traditional telephone service. Much of the current volume of VoIP calls originates and terminates on public switched telephone networks, by callers using digital subscriber line (DSL) broadband services. But VoIP services are spreading to other network facilities, such as those of cable television systems. According to news reports, several of the country's largest cable system operators plan to roll out VoIP services within their service territories, which would make them available to millions of households. News reports indicate that Wireless Fidelity (Wi-Fi) broadband service providers are also exploring VoIP services. Looking ahead, electric utilities that develop broadband over power lines service could also provide VoIP services. All of these recent developments, together with the rapid growth in mobile wireless telephone service, suggest that the monopoly access to household voice communications that local telephone exchanges have had for nearly a century is yielding to intensifying competition.

The prospect of growing VoIP traffic has raised concerns in some quarters that this emerging competition may undermine the current structure of regulating telephone services. A basic rationale for the economic regulation of telephone service has been the natural monopoly argument, that is, that competition for telephone service was unlikely to arise. Economic regulation then offered the prospect of an alternative way, although a problematic one, of achieving some of the benefits of competition that customers have enjoyed in most other markets. But with competition now emerging, the natural

monopoly rationale for the economic regulation of telephone service is beginning to fall away. Squelching competition as a threat to the existing regulatory framework would turn matters on their head. Regulation should adapt to changing market realities in ways that allow innovation to flourish and consumers to choose among alternatives, while ensuring national security, homeland security, law enforcement and public safety.

Realizing the Promise of Broadband

Broadband services offer download speeds much faster than dial-up Internet access, enabling innovative features such as streaming video and VoIP. For example, fiber-optic cable to the home can provide speeds of more than 100 megabits per second. Broadband services have quickly been embraced by the public, growing from 2.8 million *high-speed lines* (defined as connection speeds over 200 kilobits per second in at least one direction) in December 1999 to more than 32.4 million lines in June 2004. This represents an annual growth rate of 72 percent. In the first few years after inception, broadband penetration among U.S. households has outpaced the earlier diffusion of dial-up Internet, mobile wireless telephones, personal computers, videocassette recorders, and color television.

Universal, Affordable Access to Broadband

Last March, the President announced a national goal of universal, affordable access to broadband services by 2007. The Administration's ongoing efforts to achieve this goal reflect a belief in the powers of competition and private sector innovation to bring the benefits of broadband to consumers. As experience in the telephone industry has shown, competition offers the most robust and reliable means of broadly diffusing important technologies. The Administration has taken steps to unleash the power of free markets to deliver broadband services by removing disincentives to invest, strengthening property rights, and allowing consumers rather than the government to choose the technologies that best meet their needs.

Removing Disincentives to Invest

Competition in broadband service is growing. Already, many communities have two providers of broadband service. In 1999, 33.7 percent of the zip codes in the United States had at least two high-speed Internet access providers. By the middle of 2004, the fraction had risen to 80.5 percent. So far, competition in broadband has primarily been between DSL services provided by telephone companies and cable modem services provided by cable television system operators. Cable's share in high-speed lines has grown