

WASHINGTON, D.C.

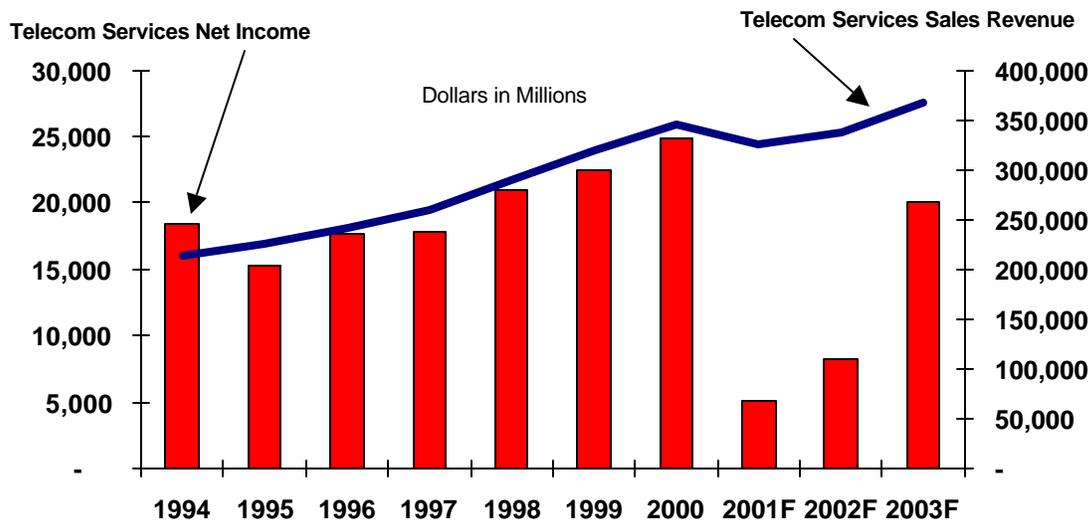
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Telecommunications Sector, Bruised and Battered, Looks to a Brighter Future

In the past two years the telecommunication industry has been battered by forces ranging from plunging stock prices to a slowing economy to a withdrawal of primary sources of capital. The result has been rising credit risk within the industry, growing losses, and mounting bankruptcies and defaults. Although the long-term prospects for the industry are more encouraging, the more profitable times of the future will have to wait for the current scenario of stress and consolidation to run its course. Decisions regarding future extensions of credit to this industry will require careful analysis and a realistic assessment of the longer-term supply and demand outlook for telecom services.

Chart 1.

Telecom Services Firms' Net Income Plunged in 2001 as Sales Retreated



Source: Economy.com

Telecommunications, Bruised and Battered, Looks to a Brighter Future

Telecommunications Services Firms Face Intense Competition

Telecommunications services companies include Regional Bell Operating Companies (RBOC) that provide primarily local telephone service, competitive local exchange carriers (CLEC) that were spawned by the 1996 Telecom Act to compete with RBOCs, long distance companies, and wireless service providers.¹ As the provisions of the Telecommunications Act of 1996 are implemented, the distinctions among the companies in these categories are becoming increasingly blurred. More and more firms are offering both long distance and local phone service and, in some cases, wireless service as well. Other firms in this category offer a variety of telecommunications services to communications-intensive businesses. Some of these firms have built extensive fiber optic networks around the globe and provide companies access to their network for voice, data, and video transmission.

The Telecommunications Act of 1996 was designed to foster competition within the telecom industry. The competitive fervor unleashed by this legislation, combined with the recent slowdown in the economy and the disappearance of outside capital, has put many telecom service firms in dire straights. The telecommunications industry contributed 13.3 percent and 25.8 percent of the total dollar volume of corporate bond defaults in 2000 and 2001, respectively, more than any other industry.² The industry has been marred by a string of bankruptcies including Winstar, Global Crossing, Williams Communications, McLeod USA, 360Networks, PSINet, and Teligent just to name a

¹ Cable companies could also be put into this category, but will be treated as a separate sector.

² Moody's Investor Service, *Default and Recovery Rates of Corporate Bond Issuers*, February 2001 and February 2002.

few. According to *PriceWaterhouseCoopers*, the number of telecom bankruptcies is likely to increase further in 2002.³

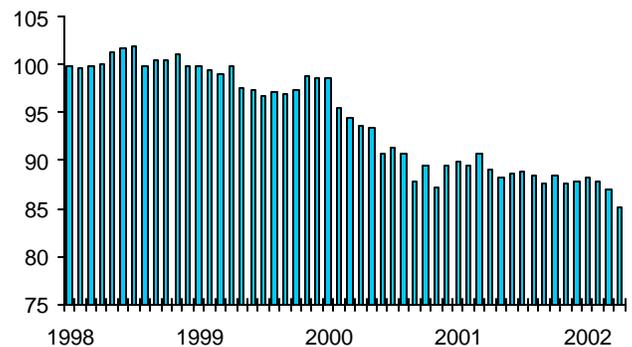
Telecom Services Firm are in an Earnings Crunch

Earnings pressure on this sector has been intense. All but the incumbent local exchange carriers have faced a competitive environment that has driven down prices to previously unheard of levels (see Chart 2). In addition, most firms have gone heavily into debt to upgrade their networks and related equipment. Telecommunication services (excluding wireless) firms saw total liabilities increase rapidly

Chart 2

Long Distance Prices Dropped Steadily
Throughout 2000

CPI-Urban, Telephone--Long Dist. Charges



Source: Bureau of Labor Statistics

from 1996 to 2000. Throughout much of this period net income and net profit margins grew steadily

³ PriceWaterhouseCoopers, Press Release to: *Phoenix Forecast: Industry Bankruptcies and Restructurings 2002*, April 4, 2002.

<http://www.pwcglobal.com/Extweb/ncpressrelease.nsf/docid/0D212518C41000C885256B97006A8D68>

until demand started to sag in 2000, reducing profits and putting many firms in the red. The wireless industry also experienced rapidly growing debt in the late 1990s. Despite healthy growth in sales in 2001 for most of the larger wireless firms, positive net income was elusive for most of them. Indeed, few wireless firms have made any profits in the past several years.

The earnings problem of the major long-distance companies over the past few years is old news. These companies have been enduring intense competition and drastically lower prices for their services. However, even the nearly monopolistic local carriers have experienced sharply reduced earnings in 2001, leading to slashed payrolls and greatly reduced capital budgets. The slowing economy and the effects of a growing debt burden has hurt the local phone companies, as some of these firms experienced lower revenue for the first time in years.

Net income for the telecom services industry as a whole is estimated to have dropped by some 80 percent in 2001. Although 2002 net income is expected to increase, *Economy.com* expects it to remain at fairly depressed levels.⁴

Is There a Bandwidth Glut?

Conventional wisdom has it that one of the reasons for the downfall of the telecommunications industry is a glut of fiber optic cable that has been installed around the world. *BusinessWeek Online* stated that “since the 1980s, telecommunications companies have deposited 283 million miles of optical cable into the ground, according to fiber-optic consultancy KMI Corp. That cable powers phone networks and the Internet, enabling most of the high-speed communications of the Wired Age. Strung together, those cables would circle the earth 11,320 times”.⁵

Some analysts are now questioning this premise. Although the earth can be looped many times by the

existing fiber optic cable installed around the world, an excess supply of cable does not translate into an excess supply of bandwidth—the information carrying capacity of the cable. In fact, as the economy recovers and the various choke points to the delivery of bandwidth (such as a dearth of high speed cable modems and DSL lines) are alleviated, there could well be a significant shortage in bandwidth in a relatively short period of time. The inexpensive part of producing bandwidth is putting the cable in the ground, which accounts for about 5 percent of the total cost of “lighting” up the cable. Attaching the necessary equipment to the cable is the biggest expense associated to installing fully functioning fiber optic cable. Without the additional equipment the cable is considered “dark”. Dark cable may be potential bandwidth, but without considerable additional investment, it is like a seed that will never bear fruit without planting, cultivation and harvesting. Because laying cable is the cheap part of the process, it is cost-effective to place more cable in the ditch than is needed immediately. Only about 2 to 5 percent of the fiber optic cable in the U.S. are actually lit, that is, hooked up and carrying traffic.

Shortages in bandwidth may crop up in the not-too-distant future because the construction of networks and the “lighting” of dark cable have essentially come to a standstill, bringing bandwidth supply growth to a halt. There is also a concern that the telecom crisis has choked off innovation due to a lack of funding and related development. Finally, it is expected that the surviving firms will likely be the more staid incumbent companies. These firms operate networks based on older circuit-switched technology rather than those based on Internet protocol. Some feel that in order to avoid being left behind they will slow the pace of change. In the meantime, worldwide demand for communication continues to grow at an annual rate of 7 to 15 percent.⁶

Bandwidth demand could skyrocket once the number of homes with high-speed connection begins to proliferate. Currently, only a small fraction of all U.S. homes have either cable modems or DSL lines. However, consumers’ need for high-

⁴ Economy.com, *Precis Industry*, Telecom Services, February 2002.

⁵ Kharif, Olga, “The Fiber-Optic ‘Glut’ – in a New Light”, *BusinessWeek Online*, August 31, 2001.

⁶ Maney, Kevin, “Many Fiber-Optic Lines Unused Despite Rising Demand”, *USA Today*, March 21, 2002.

speed Internet connectivity is not compelling at this time. Once online movies and other popular applications are introduced, the demand for bandwidth could surge.

Clearly, reports of declining bandwidth prices suggest a supply/demand imbalance. This will eventually self-correct if the market is working properly. If those who downplay the notion of a glut are correct, bandwidth could soon shift from an excess supply to an excess demand situation, resulting in capacity shortages that could lead to higher costs to consumers and greater network congestion.

Wireless—The Growth Engine That Could

Wireless phone companies enjoyed stellar revenue growth in 2001, even as most of these firms remained firmly in the red. Heavy debt burdens and inadequate numbers of current subscribers are keeping these firms from profitability.

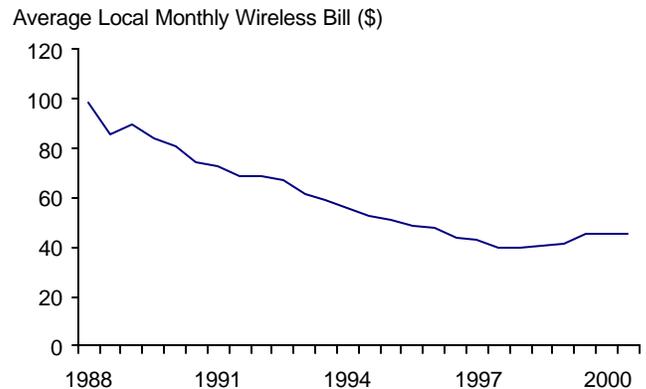
Although revenue and subscriber growth are headed in the right direction, high debt, intense competition, and the uncertainties of consumer demand for future wireless applications are making investors squeamish about the industry's future. Indeed, the wireless industry is in a state of transition at this time. Although subscriber growth is very high currently, the growth rate is likely to slow as the market reaches a saturation point. During the year ending June 2001, the number of U.S. wireless subscribers increased over 22 percent to 118.4 million according to the Cellular Telecommunications & Internet Association's semi-annual wireless industry survey⁷, putting market penetration at about 40 percent of the U.S. population—still significantly below the estimated market saturation point of roughly 60-70 percent. Subscriber growth should continue to decelerate as the market approaches the saturation point, stabilizing in the low single digits at the end of the

decade according to the research firm Alexander Resources.⁸

The steady decline in wireless prices appears to have come to a halt. Prices for wireless services had been declining unchecked through the end of 2000. However, the consumer price index for cellular phone service appears to have reached bottom. The result, combined with an increase in average usage, has been a gradual increase in the average local wireless phone bill, which stopped dropping in December 1998 (see Chart 3). According to *Standard & Poor's*, a positive trend in this measure is an indicator of improved long-term profitability and suggests an alleviation of short-term competitive pressures.

Chart 3

Customers' Average Local Monthly Wireless Phone Bill Reached Bottom in 1998



Source: Cellular Telecommunications & Internet Association

The future of the wireless industry is positive overall. However, the road to stability and profits will be paved with industry consolidation and considerable uncertainty. For instance, it remains unclear whether the advent of third generation (3G) wireless technology in the United States will yield the financial benefits that the industry is expecting.⁹ European firms have been buried in debt from the

⁸ Standard & Poor's, "Telecommunications: Wireless," *Industry Surveys*, November 1, 2001.

⁹ The third generation of wireless technology (3G) will take consumers beyond cellular and personal communication services. It combines mobile technology with high data transmission capacity, enabling multimedia applications.

⁷ Cellular Telecommunications & Internet Association, CTIA's Semi-Annual Wireless Industry Survey Results, June 1985 to June 2001. <http://www.wow.com/industry/stats/surveys/>

cost of acquiring the 3G licenses sold in auctions there. Furthermore, there is continued uncertainty whether consumer demand for 3G applications such as Internet and video services will be adequate to provide a reasonable return on investment within a reasonable period of time. Wireless communications is likely here to stay. However, the wireless landscape could look very different tomorrow than it does today.

Cable Television Embodies the Convergence of Telecom and Broadcasting

The cable TV sector is frequently grouped with the broadcasting industry. However, it also fits well within the telecommunications industry due to its rapid deployment of cable telephony and high speed Internet connection services. In fact, the telecommunications and broadcasting industries are rapidly converging into a single multifaceted entertainment/communications industry.

The cable TV sector is also characterized by a high degree of concentration, and pending mergers point to still greater concentration going forward. The top ten cable operators account for about 82 percent of the roughly 73 million cable subscribers in the U.S. On December 19, 2001, AT&T and Comcast Corporation announced their intention to merge AT&T Broadband and Comcast. If approved by regulators, the new firm will be the dominant firm in the industry with nearly 23 million subscribers. The next largest cable subscriber base would be AOL Time Warner with 13 million.

Another pending merger is that of EchoStar Communications and Hughes Electronics, owner of DirecTV. Hughes, in turn, is owned by General Motors Corporation. These firms provide direct broadcast satellite services (DBS). If the merger is approved by regulators, the new company will have almost 17 million subscribers. Many analysts believe these mergers will lead to further industry consolidation as smaller firms combine in order to compete with the newly formed giants.

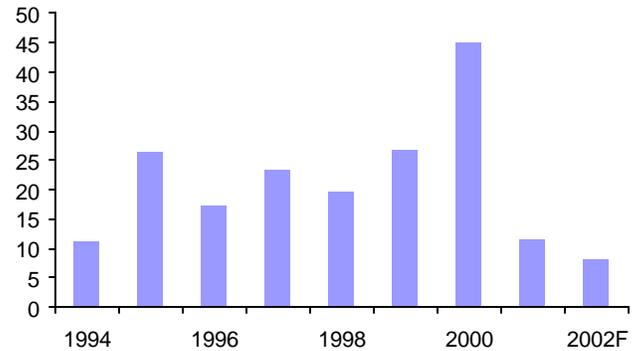
The recession has also taken a toll on the cable industry—but not nearly to the degree it has hurt TV and radio broadcasters. Although cable revenue

growth has slowed in 2001, it still grew at a 12 percent clip—down from 45 percent growth the year before (see Chart 4).

Chart 4

Cable TV Revenue Growth Slowed Considerably in 2001 and Will Remain Subdued in 2002

Percent Change From Prior Year



Source: Economy.com

The cable TV industry is considered a defensive industry since it relies on subscriber fees rather than advertising as its primary source of revenue. In 2000, for example, subscriber fees accounted for about 75 percent of total revenue. When the economy slows, ad revenue may weaken as it did in 2001, but subscriber fees tend to hold steady.¹⁰ Cable TV is considered a good entertainment value and is among the last services households discontinue in hard times.

The cable TV industry is very capital intensive. Consequently, the short-term financial performance of the industry is best measured in terms of operating income before depreciation and amortization (EBITDA) rather than net income. Almost all of the top ten publicly traded cable operators are generating positive cash flow. The results are more mixed among the smaller operators.

Most analysts believe the outlook is quite positive for the cable TV industry. Growth in capital expenditures likely peaked in 2001 and revenue and EBITDA growth may well accelerate over the next

¹⁰ Standard & Poor's estimates that U.S. cable advertising revenue increased 5 percent in 2001 compared to a 15 percent gain in 2000.

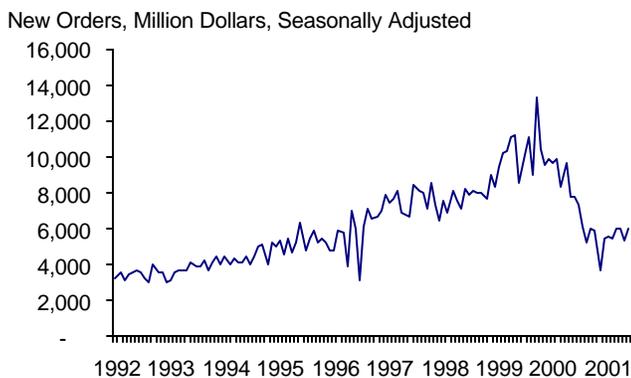
two years.¹¹ It has been estimated that 80 to 90 percent of the cable industry has been upgraded to 550 MHz or better, two-way cable, making it poised to deliver such applications as video on demand and interactive TV.

Telecommunications Equipment Manufacturers Await the Revival of the Telecom Services Sector

The fortunes of telecommunications equipment manufacturers depend largely on those of their customers, the telecommunications service providers. When the telecom industry began to implode in late 2000 with the withdrawal of investors from the sector, equipment manufacturers saw orders evaporate and revenues dwindle. In fact, new orders for communications equipment reached a peak at about \$13.3 billion in June 2000 and dropped steadily to about \$3.6 billion in September 2001 (see Chart 5).

Chart 5

Spending on Communications Equipment Peaked in June 2000



Source: Bureau of the Census

The sharp drop in capital expenditures on the part of telecom service firms led to a sizable decline in sales revenues and profits among many telecommunications equipment manufacturers. In fact, the weak demand for telecom equipment has the industry operating at about 55 percent of capacity, down from 87 percent in May 2000. This excess capacity suggests that pricing will remain

soft for some time. In 2001, sales revenues for telecom equipment companies are estimated to have declined by nearly 28 percent from the prior year. Current cuts in telecom capital budgets suggest that revenues will fall further in 2002. In fact, Economy.com is forecasting revenue to decline 19 percent this year.¹² Consequently, profits were down in 2001 and are expected to remain weak in 2002.

Declining revenues and incomes have led to drastic measures in the telecom equipment sector to cut costs and shore up net income. Communications equipment employment fell about 60,000 in 2001, a decline of 20 percent from the employment numbers of the prior year.

The apparent U.S. economic recovery may bode well for the telecommunications equipment industry. However, the industry's recovery will lag the general economic recovery. The equipment industry will see little relief until the telecommunications service sector stabilizes and regains its appetite for capital expenditures. Significant growth in capital investment in telecom equipment must await several developments; first, balance sheet restructuring is needed to reduce the industry's debt burden; second, a resurgence in demand for telecommunications services—both for consumers and businesses—must be evident; and finally, sources of financing, both external and internal, must be restored. Most analysts don't expect these conditions to position telecommunications companies to start increasing their capital budgets until 2003.

Conclusion

The telecommunications boom and subsequent bust has been likened to the boom and bust associated with the development of the nation's railroads. A lot of money was made and a lot of money was lost; there was a shakeout and then stability. The telecommunications industry is clearly in the shakeout stage of its life cycle. The banking industry's lending exposures to telecom and the risks associated with those exposures are clear

¹¹ See Credit Lyonnais Securities (USA), Inc., Industry Update, Media: Cable, *MSO 2002: It's Cable's Game to Lose*, January 16, 2002.

¹² Economy.com, *Industry Precis*, "Telecom Equipment", March 2002.

today. However, decisions regarding future extensions of credit to this industry will require careful analysis and a realistic assessment of the longer-term supply and demand outlook for telecom services.

About the Author

Stephen Gabriel is a Senior Financial Economist in the Financial Institutions Section of the Division of Insurance.