INVESTMENT, CAPITAL SPENDING AND SERVICE QUALITY IN U.S. TELECOMMUNICATIONS NETWORKS: A SYMBIOTIC RELATIONSHIP

INTRODUCTION

In a capital-intensive business like telecommunications, service providers must continually invest significant amounts of money in their networks in order to keep their capabilities responsive to customer needs. That capital comes from ongoing operations and outside investment. Because large-scale networks cannot be built overnight, capital expenditures (capex) must be made today to ensure that demands are met months and years from now.

Today it is not at all clear that the nation's largest incumbent local exchange carriers (ILECs) – BellSouth, SBC, Qwest and Verizon – are making those needed investments. In fact precisely the opposite appears to be occurring. The potential negative impact of reduced investment is far-reaching: consumers face the loss of service quality and slower introduction of new services; equipment manufacturers either fall to bankruptcy or experience significant sales declines and struggle to maintain R&D budgets; and dissatisfied customers spend less on telecommunications services making it that much more difficult for carriers to invest. Clearly, the cycle triggered by low network investment poses serious risks for consumers, the telecommunications sector and the broader American economy.

The objective of this paper is to bring some data to bear on the question of - relationships between investment capital, capital expenditures for communications networks and service quality. The paper draws on data compiled by various l independent securities analysts and the Federal Communications Commission's (FCC) ARMIS database to examine:

1. Recent trends in capital spending on local wireline telephone networks; and
2. The implications of these trends for service quality

TRENDS IN CAPITAL SPENDING

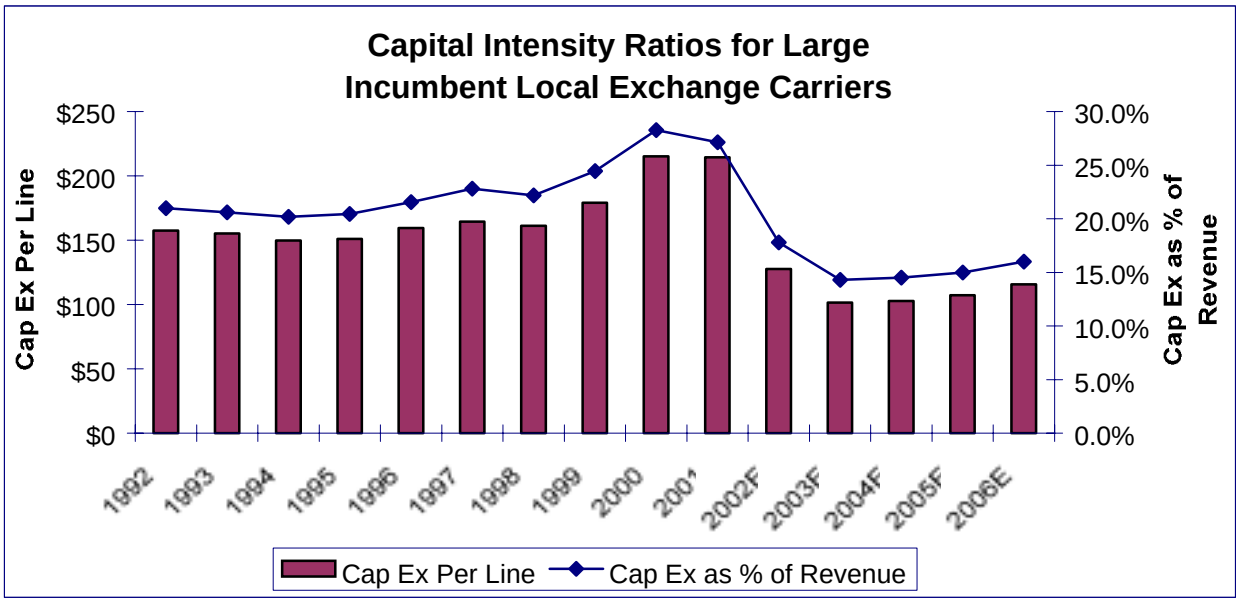
Securities analysts use *capital intensity measures* to judge how a carrier's capital outlays in a given year compare with historical averages. Over time these averages give analysts an indication of the levels of capital spending that carriers must maintain to keep service quality and network capabilities responsive to customer needs.

Capital intensity ratios vary by carrier and by market conditions. For example, carriers like BellSouth and Qwest maintain relatively large numbers of high cost lines in rural areas and therefore have to reinvest higher percentages of their operating revenue in local wireline networks to keep service quality high. Capital intensity ratios also vary over time as new

network technologies (*e.g.*, fiber optics, digital loop carriers, DSL, switch upgrades) are deployed. The deployment of new technologies can cause these ratios to trend up or down depending on how they affect the overall cost of providing network services. For example, the deployment of Fiber-to-the-User (FTTU) could cause an initial spike in this ratio while the deployment of a new energy efficient next generation switch might cause a decrease since power is a major element of network expense. Finally, market conditions, including the regulatory environment, influence capital intensity ratios because they typically have an important bearing on the financial returns service providers earn on their capital investments.

Chart 1 depicts two capital intensity ratios for the regional Bell companies and GTE for the period 1992- 2001: Capital spending-to-revenue and capital spending per access line.

Chart 1



Source: FCC ARMIS Reports for 1992 – 2001. Estimates for 2002-2006 from J. Parmelee, Telecom Equipment - Wireline Update, Credit Suisse First Boston, September 26, 2002.

Chart 1 shows that for the four years preceding the passage of the 1996 Telecom Act and the commercialization of Internet Web browsers in the 1995-96 time frame, local exchange carriers routinely spent 20-22 % of their sales on replacing, refurbishing or upgrading plant and equipment. The relative stability of capital spending during the early 1990s reflected the traditional growth and largely predictable traffic characteristics of a primarily voice-based network. Since then the rapid growth of the Internet and cellular phone service have dramatically altered market conditions and traffic patterns while creating new demands on network design and investment.

THE AMERITECH EXPERIENCE: 1993-1999

One notable exception to the pattern of stability in capital spending by U.S. local exchange carriers in the early to mid-1990s was Ameritech. This mid-western carrier deliberately reduced its capital intensity ratios well below both industry norms and the company's prior levels

beginning in 1993. State regulators in Ameritech's five-state region have speculated that the company's management sought to make the firm more appealing to potential buyers by cutting capital budgets and depreciation expenses with the result that over time the company's profitability and market value improved.

From 1993 through 1998, the year Ameritech announced that it would merge with SBC for $63 billion in SBC stock, data depicted in Table 1 show the company cut its annual capital expenditures below 20 percent of sales and below $100 per access line. No other carrier (including Ameritech) had ever attempted to operate at such low levels of capital spending for any length of time.

As Table 1 further shows, Ameritech's strategy rewarded its shareholders handsomely. From 1993 to October 1999, when its sale to SBC was completed, Ameritech's stock outperformed all other regional Bell company stocks by 50 percent, a huge margin given the fairly narrow ranges that Bell company stocks historically traded in relation to one another. In addition to immediately increasing free cash flow, reduced capital expenditures also lower deprecation expenses, thereby adding to earnings growth. Because free cash flow and earnings growth dictate how much cash a company will generate and return to its investors over time, they play a key role in determining how stocks are valued.[1]

While shareholders benefited, Ameritech's decision to cut capital spending clearly had a negative impact on the company's customers. In 1993 and 1994, complaints that residential customers filed with state regulatory commissions in Ameritech's five state region averaged 16 and 15 complaints per one million access lines in those years, the lowest of any regional Bell company at that time. Between 1994 and 2000, however, the number of residential complaints per one million Ameritech access lines soared from 15 to 1,044, the highest of any regional Bell company. This extraordinary spike in customer complaints suggests that the level of Ameritech's capital expenditures between 1993 and 1998 was <u>not</u> sufficient to maintain basic service quality.

The data further indicate that it took about two to three years for relative reductions in capital expenditures to begin to adversely affect service quality. This lag reflected the traditional 24-36 month planning horizon that historical voice traffic patterns allowed. Ameritech may have sought to capitalize on this characteristic lag time by betting that it could cut back capital spending for a period of time and improve earnings without sacrificing service quality. What Ameritech may not have anticipated was the sudden surge in Internet and wireless traffic that placed new demands on local wireline networks during the late 1990s. This traffic was over and above what traffic forecasts based on historical growth patterns would have predicted. Whatever the reasons, Ameritech did not spend enough capital during the mid-to-late 1990s to keep the capabilities of its local wireline networks abreast of the demands placed on it. As a result service quality in its five-state operating territory suffered, particularly during the 1998-2000 time frame.

[1] See S. Cottle, R.F. Murray, and F.E. Block, *Graham and Dodd's Securities Analysis*, 5th Edition, McGraw Hill, (New York: New York, 1988), pp. 237- 262.

Table 1
The Ameritech Experience: Capital Spending vs. Shareholder Returns vs. Service Quality Complaints

Capital Intensity Ratios:

Cap Ex as % of Revenue	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*
Ameritech States	18.9%	18.1%	18.6%	**16.0%**	**13.7%**	**13.7%**	**16.5%**	**17.4%**	**17.3%**	**16.8%**	20.0%	25.0%
Large ILECs w/o Ameritech	22.9%	22.7%	21.3%	21.2%	21.1%	21.4%	22.2%	23.6%	22.9%	25.5%	29.4%	27.4%

Cap Ex Per Access Line												
Ameritech States	111	106	109	**94**	**80**	**80**	**97**	**102**	**104**	**105**	130	166
Large ILECs w/o Ameritech	147	150	141	141	137	139	145	149	146	164	196	191

Source: Bear Sterns and FCC ARMIS Reports

Shareholder Returns:

Share Price Index 12/31/89=100	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*
Ameritech	98	93	105	113	**119**	**173**	**178**	**237**	**373**	**402**	NA	NA
Other Big ILECs	95	91	98	112	100	142	133	196	274	271	247	220

Source: Compustat

Service Quality Complaints to State PSCs per 1 Million Access Lines

Residential	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*
Ameritech States	NA	NA	NA	16	15	**151**	**174**	**240**	**182**	**312**	**1044**	576
All RBOCs incl. Ameritech	NA	NA	NA	154	191	258	270	174	209	319	404	251
Business												
Ameritech States	NA	NA	NA	8	6	**49**	**29**	**49**	**73**	**44**	**177**	177
All RBOCs incl. Ameritech	NA	NA	NA	53	103	132	112	78	82	103	112	85

Source: ARMIS 43-05
** Service quality complaints are complaints pertaining to service quality filed with state regulatory authorities.*
Does not include complaints relating to billing, operator services, etc.

NA -- Not Available

Note: SBC acquired in Oct 1999. FCC continues to collect financial and service quality statistics for 5 Ameritech states through ARMIS Reports.

Index of price per share for Other Big ILECs reflect the market weighted average price per share for BellSouth, SBC and Verizon.

THE CAPEX BOOM: 1996-2000

From 1996 through 2000, following the passage of the Telecommunications Act of 1996 (TA96) and the commercialization of Web browsers, capital expenditures by all telecom carriers rose at an average annual rate of 28% versus a far more modest 10% annual increase in revenues.[2] (See Table 2) While several factors contributed to the boom in capital spending in the late 1990s, three stand out:

- The emergence of a "pro-competitive" regulatory environment following passage of TA96 led many investors to believe that Federal and state regulators had both the will and wherewithal to ensure that new entrants into local telecom markets would succeed financially.

- Rapid growth in Internet traffic, exaggerated by the subsequently discredited claims that Internet traffic was doubling every three months (instead of every 9-12) during the late 1990s, led many investors to conclude that whatever amount of network capacity was built would eventually be filled because of the seemingly insatiable demand for bandwidth.[3]

- A "white hot" IPO market in tech and telecom stocks fueled unrealistic Internet growth expectations and created the illusion that new networks could be built with a seemingly endless stream of very cheap capital.

Table 2
Capital Spending Summary: 1996-2001

($ in millions)	1996A	1997A	1998A	1999A	2000A	2001A
Local Exchange Carriers	$18,138	$20,125	$21,592	$27,446	$30,972	$29,392
CLECs	862	1,471	2,752	5,064	8,528	4,458
IXCs	16,634	21,620	26,447	35,097	50,956	39,105
ISPs	147	391	1,016	2,135	4,739	2,290
Cable Companies	6,681	6,484	9,046	12,595	17,920	17,338
U.S. Total	**42,462**	**50,091**	**60,852**	**82,337**	**113,115**	**92,583**
Year-over-year growth		18.0%	21.5%	27.9%	37.4%	-18.2%

Source: J. Parmelee, Telecom Equipment - Wireline Update, Credit Suisse First Boston, September 26, 2002.

The cumulative effect of all three factors enabled capital spending by all facilities-based carriers to nearly triple between 1996 and 2000. However, because revenue grew at a far

[2] Blake Bath, *Telecom Sea Change Creates Overcapitalization*, Lehman Brothers, September 20, 2000, p.5.
[3] See Yochi Dreazen, "Behind the Fiber Glut," Wall Street Journal, September 26, 2002.

more modest pace over this same period, returns fell well below levels that investors were prepared to accept, as shown in Table 3 using various analytic metrics.

Table 3
Returns on Capital for U.S Telecom Carriers: 1996-2001

	1996A	1997A	1998A	1999A	2000A	2001A
Revenue/Cap Ex	$5.08	$4.47	$4.13	$3.58	$3.00	$2.84
% Growth		-12.0%	-7.6%	-13.3%	-16.2%	-5.3%
Incremental Rev/Cap Ex	NA	$0.36	$0.39	$0.34	$0.32	$0.26
% Growth			8.3%	-12.8%	-5.9%	-18.8%
EBITDA/Capital Ex	$1.71	$1.40	$1.30	$1.25	$1.02	$0.96
% Growth		-18.1%	-7.1%	-3.8%	-18.4%	-5.9%
Net Income/Capital Ex	$0.52	$0.39	$0.35	$0.31	$0.17	$0.09
% Growth		-25.0%	-10.3%	-11.4%	-45.2%	-47.1%
Return on Equity	13.8%	11.6%	9.8%	9.2%	5.9%	3.7%
bp Change		-217bp	-182bp	-64bp	-330bp	-215bp

Note: Returns on capital summary include ILECs, IXCs, CLECs and Wireless Carriers
Source: Blake Bath, 2001 – An Inflection Year for Return on Capital, Lehman Brothers, April 23, 2001

THE CAPEX BUST: 2001 - ?

By late 2000, discrepancies between growth in carrier capital spending and operating revenues caused return-on-capital to deteriorate to a point that many investors reduced investment in telecom ventures or abandoned the sector altogether. As they did, many CLECs that needed debt and equity capital to finance operating costs were forced into bankruptcy. Other carriers, most notably WorldCom, allegedly attempted to mask the problem through fraudulent accounting. Once these allegations became public, investors became even more reluctant to invest due to heightened levels of uncertainty about actual telecom market growth and earnings.

What does this mean for the future of capex with its implications for subscribers, telecom equipment manufacturers and the economy? Table 4 depicts Credit Suisse First Boston (CSFB) capital spending forecasts for U.S. telecom carriers, Internet service providers, and cable TV operators for the period 2002-2006. It also highlights capital spending-to-revenue ratios and capital spending-per-access line for the same five-year period. Table 5 contains CSFB's "upside" and "downside" capital spending scenarios for its "most likely"

forecasts in Table 4. All three scenarios correspond with and are driven by differences in regional Bell company revenue growth expectations that also are depicted in Table 5.

Data in both tables forecast that capital spending by all wireline carriers – ILECs, CLECs, IXCs, ISPs, and cable companies – will continue to decline through 2003 and possibly 2004 and will recover slowly beginning in 2005. Indeed, CSFB's "most likely" forecasts stipulate that total capital spending by all wireline carriers in 2006 will remain 9% below 2002 levels – which are expected to be 48% below total expenditures in 2001.

Table 4
U.S. Capital Spending Forecasts By Type of Service Provider: 2002-2006

($ in millions)	2001A	2002E	2003E	2004E	2005E	2006E	5-Yr CAGR 2001-2006
Local Exchange Carriers	$29,392	$18,500	$15,000	$15,501	$16,516	$18,146	-9%
CLECs	4,458	1,500	600	500	400	300	-42%
IXCs	39,105	12,800	11,500	11,842	12,134	12,511	-20%
ISPs	2,290	1,000	600	600	500	400	-30%
Cable Companies	17,338	14,800	12,500	11,875	12,172	12,902	-6%
U.S. Total	92,583	**48,600**	**40,200**	**39,958**	**41,340**	**43,839**	**-14%**
Year-over-year growth		-47.5%	-17.2%	0.7%	3.3%	5.4%	

Regional Bell Company Capital Intensity Ratios	2002E	2003E	2004E	2005E	2006E
Cap Ex as a % of Sales	17.8%	14.3%	14.5%	15.0%	16.0%
Cap Ex per Access Line	$128	$101	$103	$107	$116

Note: Cap ex per access line forecasts assume total switched access lines (wholesale and retail) grow by 2% per year over the 2002-2006 period. These line growth forecasts are based on historical data contained in FCC ARMIS reports and do not appear in the CSFB analysis.

Source: J. Parmelee, Telecom Equipment - Wireline Update, Credit Suisse First Boston, September 26, 2002.

Data in Tables 4 and 5 further illustrate just how linked ILEC capital expenditures are to reductions in carrier operating revenues in the preceding year. CSFB projects, for instance, that a 3% reduction in Bell company operating revenues in 2002 will be followed by a 19% cut in capital spending in 2003. This linkage results from the fact that the costs of operating a local exchange network are largely fixed (at least in the near term) which means that reductions in operating revenue "flow down" almost in their entirety to operating income. As this occurs, cutting capital expenditures is often the easiest or only

practical way to immediately offset revenue losses and preserve earnings simply because capital expenditures represent a large portion , i.e., 35-40 %, of an ILEC's total operating costs.

Finally, capital intensity ratios reflected in Tables 4 and 5 indicate that ILEC capital spending, as a percentage of revenue or on a per line basis, will remain well below industry averages during the early 1990s as well as below Ameritech's ratios during the 1993-1998 time frame. Data depicted in Table 1 above show, for instance, that Ameritech's

Table 5
ILEC Capital Spending Scenarios

$ Millions **Scenarios**	**2002**	**2003**	**2004**	**2005**	**2006**
Most Likely	$18,500	$15,000	$15,501	$16,516	$18,146
Upside	$18,500	$15,895	$16,950	$18,197	$20,301
Downside	$18,500	$12,986	$13,116	$13,699	$14,191
RBOC Revenue Growth					
Most Likely	-3%	1%	2%	3%	3%
Upside	-3%	2%	3%	4%	5%
Downside	-5%	0%	1%	2%	2%
RBOC Cap Ex as % of Rev.					
Most Likely	17.8%	14.3%	14.5%	15.0%	16.0%
Upside	17.8%	15.0%	15.5%	16.0%	17.0%
Downside	17.8%	12.5%	12.5%	12.8%	13.0%
ILEC Cap Ex per Access Line					
Most Likely	**$128**	**$101**	**$103**	**$107**	**$116**
Upside	**$128**	**$107**	**$112**	**$118**	**$129**
Downside	**$128**	**$88**	**$87**	**$89**	**$90**

Note: Companies included in ILEC Capital Spending Scenarios and ILEC Cap Ex per Access Line estimates include BellSouth, Century Tel, Citizens, Telecom, SBC Communications, TDS, and Verizon. ILEC Cap Ex per Line estimates assume that switched access lines (retail and wholesale) grow at an annual rate of 2 percent.
Source: J. Parmelee, Telecom Equipment - Wireline Update, Credit Suisse First Boston, September 26, 2002.

capital spending-to-sales ratio declined from 18.6 % in 1992 to 13.7 % in 1994 and 1995 before "recovering" to a modest 16% in 1996 and 17% from 1997 to 1999 when service quality deteriorated.

By comparison CSFB's "most likely" forecast suggests that the capital spending-to-sales ratio for the three remaining pure-play regional Bell companies (which provide local phone service to nearly 80 percent of all businesses and households in the U.S.) will fall to 14 percent in 2003 and 2004 before "rebounding" to 15 percent in 2005 and 16 percent in 2006. This assumes, however, that revenue growth moves back into positive territory in 2003 and increases, albeit modestly, through 2006. This assumption though is vulnerable to the growing line loss attributable to the migration of subscribers to mobile phones and increased competition, especially that based on the mandated availability of the unbundled network element platform (UNE-P) at regulated, discounted prices.

Under CSFB's "downside scenario" (i.e., revenue growth increases from –5% in 2002 to 1% in 2004 and 2% in 2006), Bell company capital spending would remain in the vicinity of 12% to 13% of revenue and $90 per line.

IMPLICATIONS FOR SERVICE QUALITY

The data in Tables 4 and 5 have important implications for service quality, as well as for future innovation and revenue growth derived from new service applications. CSFB's forecasts, considered together with the earlier Ameritech service quality data, strongly suggest that ILEC investment over the next 3-5 years may not be sufficient to maintain service quality at levels acceptable to consumers, much less improve it through the deployment of new technologies and services like those associated with broadband.

Ameritech's decisions to cut its capital spending-to-sales ratio to 14-17% from 1993 to 1999, while cutting its capital expenditures per access line down to or below $100, resulted in an unprecedented spike in customer service quality complaints. The forecasts depicted in Tables 4 and 5 indicate that the ratio of capital spending to revenue for all local exchange carriers in the U.S. will decline from 18 percent this year (barely above the Ameritech range) to approximately 12.5% to 16% (at or *below* Ameritech levels) depending on revenue growth over the next four years.

Assuming that ILEC access lines (retail and wholesale) grow at an annual rate of 2% over the next five years (roughly the same growth rate for new household formation in the U.S.), data in Table 5 further suggest that ILEC capital spending per access line will average anywhere from $90 (downside scenario) to $129 (upside scenario) over the 2003-2006 period. This corresponds to capital spending that is from 43% to 20% *below the average level of capital spending per access line for all ILECs during the 1992-199*5 *time frame*.

A comparison of these forecasts with the Ameritech experience is all the more disturbing in light of two additional factors. First, the cost of providing phone service in Ameritech's five state area tended to be below industry averages (due to shorter loop lengths). Consequently, Ameritech should have been the company most able to reduce investment below averages without adverse consequences. However, that clearly was not the case.

Second, when Ameritech cut its capital budget in the mid-1990s, its networks were not loaded with nearly as much Internet and cellular phone traffic as exists today or will exist in 2006.

While growth of Internet traffic has slowed somewhat in recent years, most experts believe it continues to double in volume every 12 months or so. Since the majority of Internet traffic traverses local exchange networks, accommodating it represents a capital requirement for the ILECs that will continue to increase dramatically for the foreseeable future. The same is true of cellular traffic that also traverses local wireline networks once the signal reaches a base station. Like Internet traffic, the volume of wireless calls continues to mushroom (as retail rates decline) which, of course, adds to capacity requirements that local network operators must successfully accommodate if service quality is to be preserved.

CONCLUSION

The data reviewed in this paper indicate a symbiotic relationship exists among investment capital, capital expenditures for network equipment, and service quality. If the downward trend in investment and per access line capex continues as reflected in the past two years and as projected for the near term, then service quality will plummet, as the Ameritech experience so compellingly demonstrated. As a result, the United States could quite literally be on the verge of a service quality crisis of major proportions despite being considered until very recently the telecommunications gold standard for the quality of its network and services.

Attachment 1

Capital Intensity Ratios for Large Incumbent Local Exchange Carriers

Cap Ex as % of Revenue

Company	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Ameritech	18.6%	16.0%	13.7%	13.7%	16.5%	17.4%	17.3%	16.8%	20.0%	25.0%
Bell Atlantic	19.8%	18.5%	18.6%	19.7%	20.7%	23.4%	27.2%	27.7%	33.0%	28.6%
BellSouth	22.8%	23.2%	23.6%	22.2%	22.1%	23.2%	21.7%	24.6%	27.0%	27.6%
NYNEX	17.6%	18.6%	18.8%	19.6%	18.0%	19.9%	21.2%	27.2%	29.3%	30.0%
Pacific Telesis	22.6%	21.3%	20.1%	23.8%	23.8%	24.7%	23.5%	22.4%	25.4%	22.0%
SBC Communications	20.8%	20.7%	20.0%	19.8%	24.1%	25.5%	23.1%	24.5%	29.1%	25.2%
U S WEST	24.6%	25.1%	24.8%	25.9%	28.7%	26.1%	21.6%	33.0%	38.5%	35.5%
GTE	22.3%	22.5%	22.6%	20.4%	20.7%	23.2%	21.9%	19.9%	24.9%	23.5%
All Companies	**21.0%**	**20.6%**	**20.2%**	**20.5%**	**21.5%**	**22.8%**	**22.2%**	**24.4%**	**28.3%**	**27.1%**

Cap Ex Per Line

Company	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Ameritech	$109	$94	$80	$80	$97	$102	$104	$105	$130	$166
Bell Atlantic	$125	$117	$118	$123	$130	$137	$153	$158	$195	$174
BellSouth	$156	$159	$151	$150	$147	$149	$142	$168	$189	$206
NYNEX	$132	$139	$138	$140	$128	$134	$148	$181	$194	$196
Pacific Telesis	$118	$113	$108	$118	$120	$122	$121	$118	$144	$140
SBC Communications	$129	$130	$125	$126	$159	$172	$157	$176	$232	$217
U S WEST	$155	$159	$157	$164	$184	$162	$137	$212	$252	$247
GTE	$172	$172	$169	$151	$152	$170	$162	$143	$181	$166
All Companies	**$157**	**$155**	**$150**	**$151**	**$159**	**$164**	**$161**	**$179**	**$215**	**$214**

Source: FCC ARMIS Reports

Capital Intensity Ratios for Large Incumbent Local Exchange Carriers

Cap Ex as % of Revenue

Company	1992	1993	1994	1995	1996	1997	1998	1999
Ameritech	18.6%	16.0%	13.7%	13.7%	16.5%	17.4%	17.3%	16.8%
Bell Atlantic	19.8%	18.5%	18.6%	19.7%	20.7%	23.4%	27.2%	27.7%
BellSouth	22.8%	23.2%	23.6%	22.2%	22.1%	23.2%	21.7%	24.6%
NYNEX	17.6%	18.6%	18.8%	19.6%	18.0%	19.9%	21.2%	27.2%
Pacific Telesis	22.6%	21.3%	20.1%	23.8%	23.8%	24.7%	23.5%	22.4%
SBC Communications	20.8%	20.7%	20.0%	19.8%	24.1%	25.5%	23.1%	24.5%
U S WEST	24.6%	25.1%	24.8%	25.9%	28.7%	26.1%	21.6%	33.0%
GTE	22.3%	22.5%	22.6%	20.4%	20.7%	23.2%	21.9%	19.9%
All Companies	**21.0%**	**20.6%**	**20.2%**	**20.5%**	**21.5%**	**22.8%**	**22.2%**	**24.4%**

Cap Ex Per Line

Company	1992	1993	1994	1995	1996	1997	1998	1999
Ameritech	$109	$94	$80	$80	$97	$102	$104	$105
Bell Atlantic	$125	$117	$118	$123	$130	$137	$153	$158
BellSouth	$156	$159	$151	$150	$147	$149	$142	$168
NYNEX	$132	$139	$138	$140	$128	$134	$148	$181
Pacific Telesis	$118	$113	$108	$118	$120	$122	$121	$118
SBC Communications	$129	$130	$125	$126	$159	$172	$157	$176
U S WEST	$155	$159	$157	$164	$184	$162	$137	$212
GTE	$172	$172	$169	$151	$152	$170	$162	$143
All Companies	**$157**	**$155**	**$150**	**$151**	**$159**	**$164**	**$161**	**$179**

Source: FCC ARMIS Reports