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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

June 2, 1994

VIA HAND DELIVERY

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The Honorable Susan Ness
Federal Communications Commission
1919 M Street, N.W.
Room 832
Washington, D.C. 20554

Re: GEN Docket No. 90-314
Ex Parte Presentation

Dear Commissioner Ness:

Pursuant to your request, enclosed is some research that we have done on PCS communications services. I hope that it is helpful.

Sincerely yours,

Mark A. Roberts

Mark A. Roberts
Alex. Brown & Sons Incorporated
135 East Baltimore Street
Baltimore, Maryland 21202
(410) 783-5340

MAR/pq
cc: Mr. William Caton

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Research

Communications Services

George V. Robertson, CFA
(410) 783-3266
Mark A. Roberts
(410) 783-5340

April 8, 1993

REGIONAL TELECOMMUNICATIONS HOLDING COMPANIES

Preparing For Competition

INVESTMENT RATINGS

BUY

US West

NEUTRAL

Ameritech	NYNEX
Bell Atlantic	Pacific Telesis
Bell South	Southwestern Bell
GTE	

We are adding the Local-Exchange Carriers (LECs), including the Regional Bell Operating Companies (RBOCs) and GTE to our telecommunications services research coverage. Of these newly followed companies, we rate US West (USW) "buy" as a core holdings in telecommunications because we believe they provide a balance of long-term growth and current income at moderate risk. We rate the other companies "neutral." We believe US West shares can meet this combination of investment objectives because:

-- It is among the best positioned LEC to respond to increased competition by cutting costs and developing new sources of revenues from its existing network.

-- Its less densely populated service area should be harder to penetrate than the more densely populated territories of other LECs.

-- Its strong financial position and high cash flow should allow it to deploy modern digital broadband for new services while growing dividends;

-- Its shares are valued at a discount to its comparison group based on cash flow and earnings multiples, and prospective dividend payouts and yield, despite aforementioned advantages.

Ticker	FY End	Price 4/8/93	52-Week Price Range	Earnings Per Share 1992A**	Earnings Per Share 1993E	Earnings Per Share 1994E	Cal. Yr. P/E 1993E	Cal. Yr. P/E 1994E	Indicated Div.	Indicated Yield
AIT	12	76 3/4	79-58	$5.00	$5.28	$5.58	14.7x	13.9x	$3.68	4.8%
BEL	12	54 3/8	57-40	$3.19	$3.45	$3.81	15.9x	14.4x	$2.68	4.9%
BLS	12	55 1/4	58-43	$3.36	$3.62	$3.85	15.4x	14.5x	$2.76	5.0%
GTE	12	36 5/8	38-28	$1.95	$2.20	$2.49	16.9x	14.9x	$1.82	4.9%
NYN	12	90	93-69	$6.36	$6.72	$6.98	13.4x	12.9x	$4.72	5.3%
PAC	12	47 1/8	49-36	$2.82	$2.94	$3.07	16.2x	15.5x	$2.18	4.6%
SBC	12	76 1/2	78-57	$4.34	$4.77	$5.24	16.1x	14.7x	$3.82	3.9%
USW	12	42 7/8	44-33	$2.85	$3.22	$3.37	13.5x	12.9x	$2.14	4.9%

* ADR -- estimates computed at 1.45 for the British pound.
** Excluding extraordinary and one-time items.

SUMMARY

We are broadening our Communications Services research coverage by adding the RBOCs and GTE, the eight largest local-access service providers (LECs) in the U.S. These companies are entering a new era in which they will have to meet the challenges of a new, more competitive telecommunications environment. Regulators are making greater use of competition and other market forces to control telecommunications prices as technology breaks down the historic rationale for "natural monopolies." As a result, telecommunications service providers around the world are losing traditional revenues to new competition and price declines. To protect and enhance profits, the LECs must offset revenue losses by reducing costs and developing new revenue streams. Despite the challenges, technological change is enabling a host of new services that can stimulate growth in global telecommunications at rates clearly higher than world economic growth and provide carriers with opportunities to replace lost revenue and maintain growth. Particularly important are:

-- interactive video services;
-- wireless communications services; and
-- information and data services.

The LECs are prime movers (see Figure 1) in this period of change. Their financial strength, size and core business bases will make them formidable and important forces in shaping the telecommunications industry.

We are recommending US West shares because they appear attractively valued relative to those of the other LECs. We are recommending US West because:

-- it appears to have the most defensible geographic franchises; therefore, it is likely to feel the effects of competition later than some others;

-- this favorable strategic position could allow it to better sustain dividend growth than its peer group, despite its need to invest in broadband network platforms for new services;

-- it has an attractive financial valuation relative to the other RBOCs based on cash flow and earnings multiples, dividend yield, and prospective dividend growth.

Many investors view the LECs as utilities and own their shares as conservative income growth vehicles. The biggest risk to the investment performance of the LECs appears to be the ability to continue to pay and grow dividends, especially if new competitors can capture revenues faster than these companies can replace them and cut costs. We believe that US West is among the best positioned to make the transition to a more competitive environment while continuing to pay (and grow) their dividends.

Telecommunications Overview

Figure 1

Driving Forces

Enabling Technologies
- Digital
- Wireless
- Compression

Changing Regulatory Environments
- Competition
- Alternative Services

Evolving Consumer Preferences
- Mobility
- Images
- Electronic Formats

Prime Movers

- Major Communications Enterprises
- Major Media Enterprises
- Franchise Content Providers

- Elements of Franchise
- Customer Ownership
- Operating Scale and Efficiencies

Emerging Business Opportunities

- Wireless Communications Services
- Personal Communications Services
- Information/ Database Services
- Interactive Video/ Entertainment Services

Source: Alex. Brown & Sons

INVESTMENT RECOMMENDATIONS

We rate US West (USW) "buy" because it appears among the best positioned to grow earnings while maintaining or increasing the dividend payout. We rate Ameritech (AIT), Bell Atlantic (BEL), BellSouth (BCS), NYNEX (NYN), Pacific Telesis (PAC), Southwestern Bell (SBC), and GTE (GTE) "neutral." (Appendix A presents a brief profile of each company and Appendix B presents a valuation comparison summary). Competition is likely to impact the financial results of individual companies to different degrees and in different timeframes. For the next few years, we believe investors should focus on:

- those companies (such as US West) with the highest barriers to new competition, yet which are aggressively preparing to face more competition in the near future; or
- companies already facing competition and dealing with it successfully.

We are suggesting that investors focus on US West because it appears well positioned in five ways.

- **Cost reductions**--Cost reduction is an important tactical response to the loss of market share and price-cutting that typically follows the introduction of new competition. US West compares favorably with the other LECs (see Figure 2). US West appears to have the highest operating margins in the group with about average headcount reductions (see Figure 3).

- **Geographic franchise**--US West is likely to be among the last to feel the effects of competition because the low population density in its region is a barrier to entry. US West is also aggressively defending its customer base and erecting other entry barriers by deploying a modern broadband network platform for new services to better leverage its existing infrastructure and make it more difficult for new competitors to enter its markets and take share.

- **Customer-driven versus "recovery"-driven investment focus**--US West appears to be moving very aggressively toward infrastructure investment based on market opportunities as opposed to traditional "recovery"-based investment decisions. These markets have been highly regulated and infrastructure investment decisions have been driven by what rate of return (recovery) regulators would allow, instead of what products and services customers would pay for.

- **Comparative valuation**--US West appears attractively valued versus the other RBOC's and GTE based on P/E and EBITD multiple, dividend yield, and free cash flow (see Figures 3 and 4).

- **Ability to sustain dividend payout and growth**--US West appears about average with the other RBOCs on free cash flow and incremental broadband build-out costs. However, it has, in our opinion, one of the best-articulated competitive strategies while perhaps being among the last to feel the effects of competition (see Figure 5).

Figure 2

REGIONAL HOLDING COMPANIES
Employee Headcount Comparisons

		Tot. Emp. 1984-92	LEC Emp. 1984-92	'92 Acc. Line/ LEC Emp.	'92 Tot. Rev./ Tot. Emp.
Ameritech	AIT	-6.0%	-12.0%	261	$153,087
Bell Atlantic	BEL	-8.2%	-21.9%	288	$177,129
BellSouth	BLS	1.2%	-8.2%	225	$156,537
NYNEX	NYN	-13.7%	-16.3%	222	$160,623
Pacific Telesis	PAC	-20.2%	-25.4%	258	$161,950
Southwestern Bell	SBC	-17.2%	-29.8%	256	$168,411
US West	USW	-10.0%	-21.2%	255	$161,381
GTE	GTE	5.6%	-15.9%	205	$152,308

Source: Alex. Brown & Sons

Figure 3

TELECOMMUNICATIONS REGIONAL HOLDING COMPANY OVERVIEW
Comparative Valuation Tables
(in millions, except for per-share data & ratios)

		Cal. 1993E Revenues	Cal. 1993E Op. Income	*Operating Margin*	Cal. 1993E FCF (4)	*FCF (4) Per Share*	Cal. 1992 End Cash
Ameritech	AIT	$11,520.0	$2,421.0	*21.0%*	$179.5	*$0.67*	$92.4
Bell Atlantic	BEL	$13,200.0	$2,750.0	*20.8%*	$434.8	*$1.00*	$329.7
BellSouth	BLS	$15,980.0	$3,320.0	*20.8%*	$272.6	*$0.55*	$346.1
NYNEX	NYN	$13,248.0	$2,621.3	*19.8%*	$311.7	*$1.51*	$88.9
Pacific Telesis	PAC	$10,025.0	$2,200.0	*21.9%*	$108.4	*$0.27*	$91.0
Southwestern Bell	SBC	$10,290.0	$2,360.0	*22.9%*	$275.1	*$0.92*	$505.2
US West	USW	$10,595.0	$2,530.0	*23.9%*	$170.3	*$0.41*	$205.8
GTE	GTE	$20,580.0	$4,675.0	*22.7%*	$131.1	*$0.14*	$475.0

Note 4: Free Cash Flow = Net Income + Depreciation & Amortization - Net Cap. Exp. - Dividends

Source: Alex. Brown & Sons

Figure 4

REGIONAL HOLDING COMPANY OVERVIEW
Comparative Valuation Tables
(in millions, except for per-share data & ratios)

		Cal. 1993E Yield	Cal. 1993E P/E Ratio	Cal. 1993E EBITD Mult.
Ameritech	AIT	4.7%	14.9 x	5.6 x
Bell Atlantic	BEL	4.9%	16.0	5.7
BellSouth	BLS	4.9%	15.6	5.3
NYNEX	NYN	5.2%	13.5	4.9
Pacific Telesis	PAC	4.5%	16.4	6.1
Southwestern Bell	SBC	3.9%	16.3	6.7
US West	USW	4.9%	13.6	5.5
GTE	GTE	4.9%	17.0	6.2

Source: Alex. Brown & Sons

Figure 5

TELECOMMUNICATIONS REGIONAL HOLDING COMPANY OVERVIEW
Comparative Valuation Tables
(in millions, except for per-share data & ratios)

		Cal. 1993E FCF (4)	Cal. 1993E FCF/Rev.	Cal. 1993E EBITDA	Cal. 1993E EBITDA/Rev.	Cal. 1993E Inc.Cap.Ex.(7)	Cal. 1993E ICE/FCF
Ameritech	AIT	$179	1.6%	$4,521	39.2%	$522	290.8%
Bell Atlantic	BEL	$435	3.3%	$5,350	40.5%	$1,098	252.4%
BellSouth	BLS	$273	1.7%	$6,520	40.8%	$1,440	528.3%
NYNEX	NYN	$312	2.4%	$5,271	39.8%	$477	153.0%
Pacific Telesis	PAC	$108	1.1%	$4,075	40.6%	$694	640.0%
Southwestern Bell	SBC	$275	2.7%	$4,260	41.4%	$833	302.9%
US West	USW	$170	1.6%	$4,480	42.3%	$416	244.2%
GTE	GTE	$131	0.6%	$8,250	40.1%	$1,272	970.4%

Note 4: Free Cash Flow= Net Income + Depreciation & Amortization - Net Cap. Exp. - Dividends

Note 5: Implied Growth Rate= Return on Equity (ROE) x (1- Dividend Payout)

Note 7: Estimated additional annual Capital Expenditures over current spending plans needed to build-out interactive broadband capability to 30% of access lines by 1998

Source: Alex. Brown & Sons

Though traditionally considered a natural monopoly, the local access telecommunications (LECs) industry is becoming increasingly competitive. Competition for traditional revenues is likely to come from several directions:

- **Cable Television**--New digital and fiber-optic technologies allow traditional CATV companies such as Comcast and Time Warner to offer telephone services over their networks. Big CATV service providers can offer telephone services by adding switches and upgrading their physical plant. In response, we expect many of the LECs to upgrade their networks to offer video-on-demand and other CATV services. Both industries are spending heavily, preparing to invade each other's traditional markets.
- **CAPS**--States are gradually allowing Competitive Access Providers (CAPS) to compete for medium and large business customers with fiber-optic networks.
- **PCS**--New spectrum allocations and new digital transmission technologies are giving wireless Personal Communication Services (PCS) operators, including cellular, the capacity voice quality and privacy to compete with wired networks.

So far, the CAPs have focused on transport of concentrated business traffic mainly from PBXs, computer centers, and networks. Some of the more adventurous CAPs are heading toward switched-access competition as well. New wireless PCS service providers may be licensed later this year and perhaps have systems in operation by 1995. Although eligibility for the new PCS licenses is unclear, PCS is likely to allow new entrants to enter the marketplace with possibly very competitive cost infrastructures and they could pose a significant threat to both wireline and traditional cellular revenues over time.

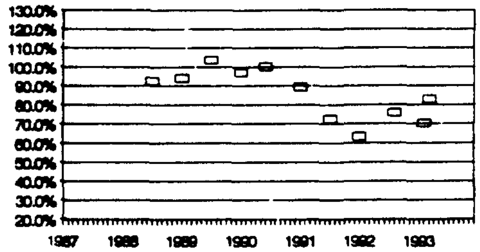
The degree and timing of competition for each of the LECs is likely to be very different. We believe that most telco shares may already, to some degree, reflect investor concerns about competition (see Figures 7 and 8). On the other hand, in some cases, these concerns may be somewhat overdone. For example, US West appears to be among the best positioned to cope with competition. US West seems to have the most defensible geographic franchise against new entrants, and it has been among the most focused at defending its traditional customer base.

New competitors are virtually certain to capture share of traditional volume and drive down prices. Carriers must address the resulting revenue losses by reducing costs and adding new revenue sources. Although US West appears to be among the best-positioned to address these challenges, their shares currently are valued at discounts to the other LECs based on earnings and cash flow multiples, dividend yield and dividend growth.

Figure 7 and 8 and 9

AMERITECH

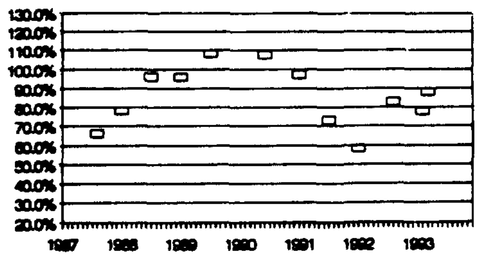
P/E Ratio on IBES Forward Earnings versus S&P 500



Source: IBES

BELL ATLANTIC

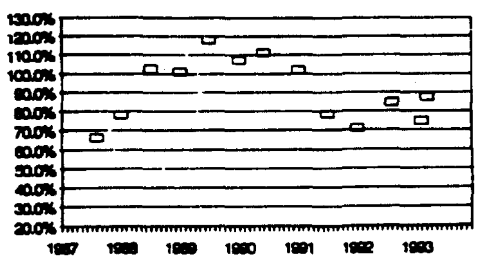
P/E Ratio on IBES Forward Earnings versus S&P 500



Source: IBES

BELLSOUTH

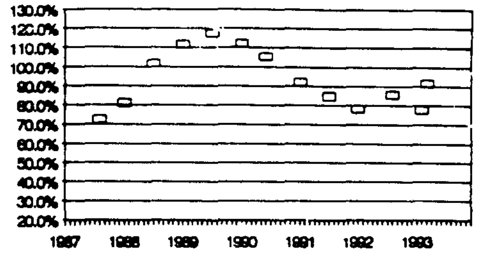
P/E Ratio on IBES Forward Earnings versus S&P 500



Source: IBES

GTE

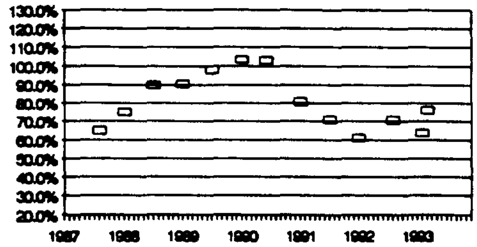
P/E Ratio on IBES Forward Earnings versus S&P 500



Source: IBES

NYNEX

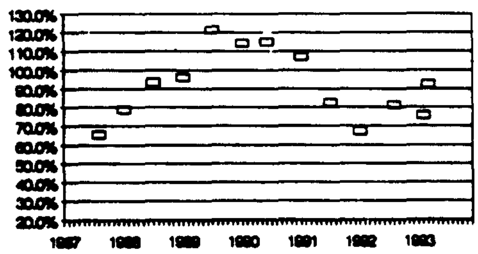
P/E Ratio on IBES Forward Earnings versus S&P 500



Source: IBES

PACIFIC TELESIS

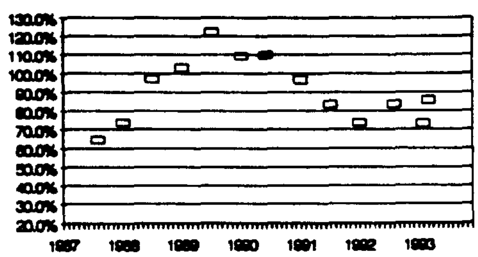
P/E Ratio on IBES Forward Earnings versus S&P 500



Source: IBES

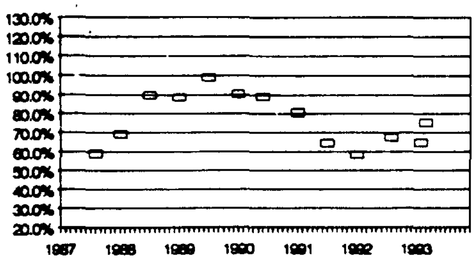
SOUTHWESTERN BELL

P/E Ratio on IBES Forward Earnings versus S&P 500



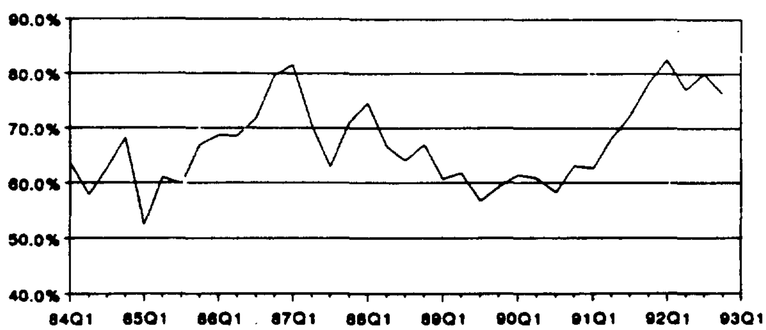
Source: IBES

US WEST
P/E Ratio on IBES Forward Earnings versus S&P 500



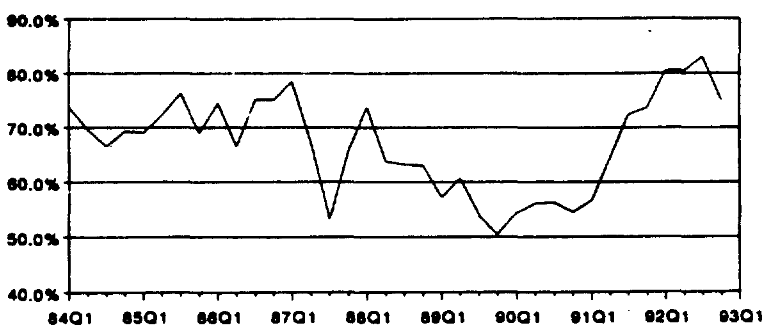
Source: IBES

AMERITECH
Dividend Yield Relative to the US 10 Year Treasury Yield

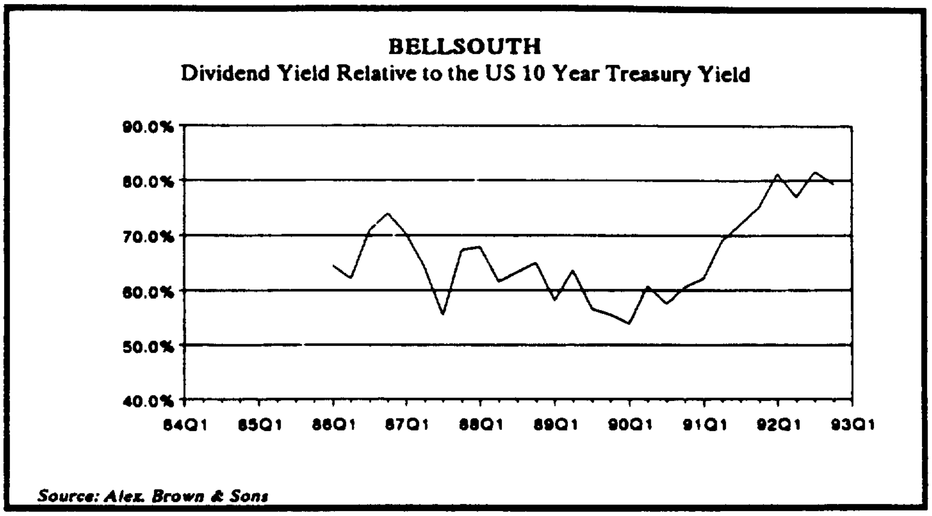


Source: Alex. Brown & Sons

BELL ATLANTIC
Dividend Yield Relative to the US 10 Year Treasury Yield



Source: Alex. Brown & Sons


BELLSOUTH
Dividend Yield Relative to the US 10 Year Treasury Yield
90.0%
80.0%
70.0%
60.0%
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84Q1
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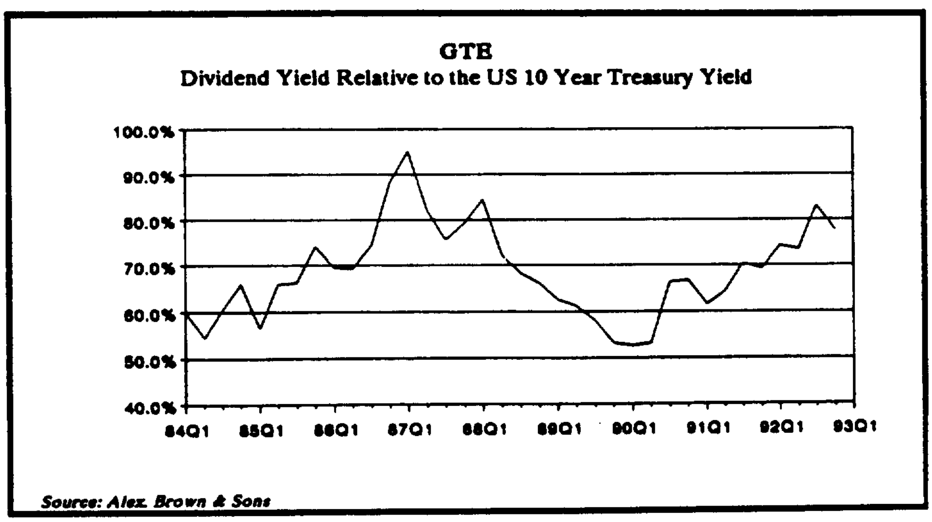
Source: Alex. Brown & Sons


GTE
Dividend Yield Relative to the US 10 Year Treasury Yield
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
84Q1
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86Q1
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89Q1
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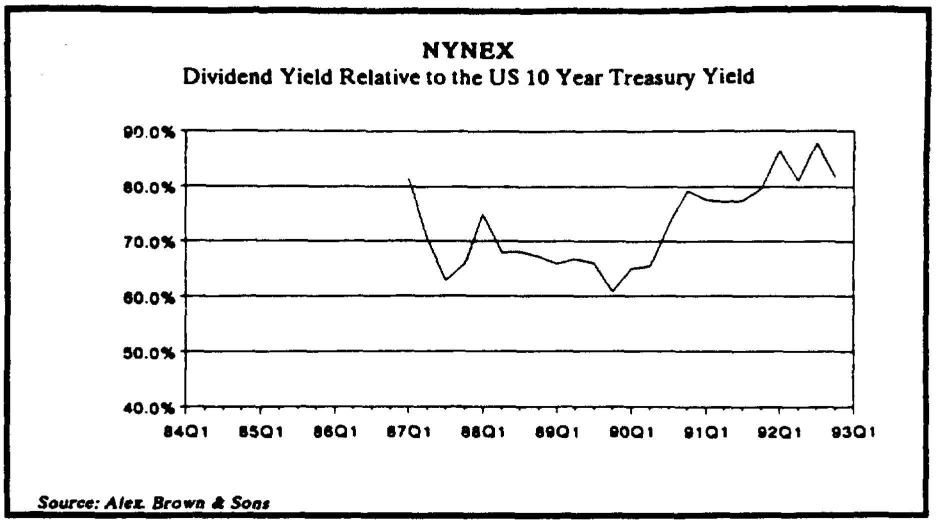
93Q1
Source: Alex. Brown & Sons


NYNEX
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90.0%
80.0%
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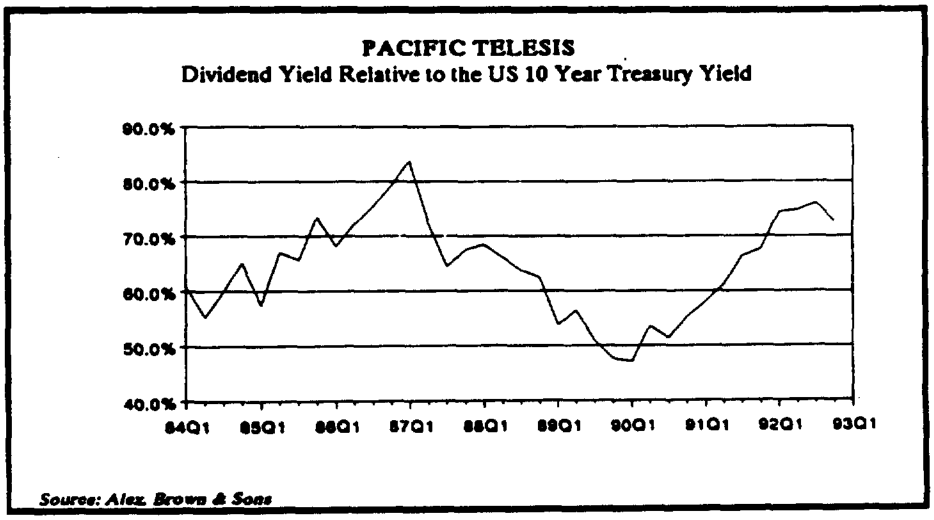
84Q1 85Q1 86Q1 87Q1 88Q1 89Q1 90Q1 91Q1 92Q1 93Q1
Source: Alex. Brown & Sons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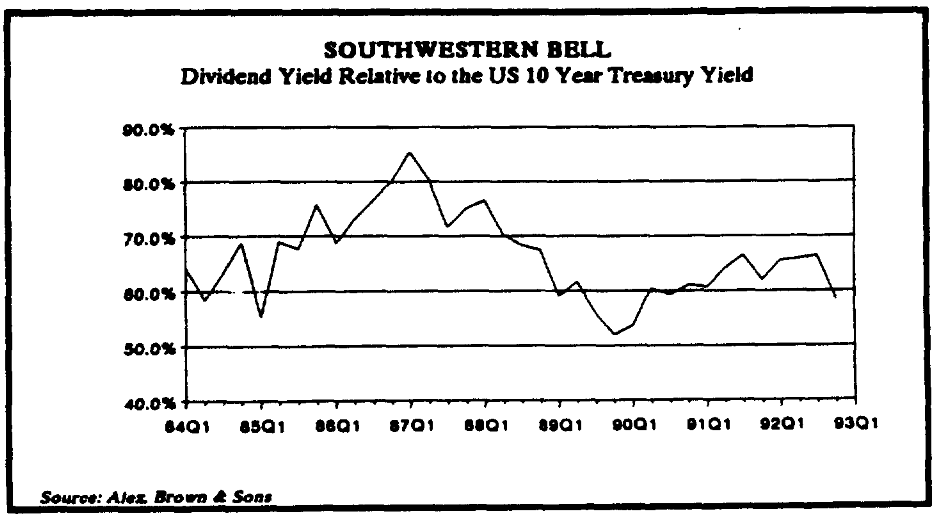
84Q1 85Q1 86Q1 87Q1 88Q1 89Q1 90Q1 91Q1 92Q1 93Q1
Source: Alex. Brown & Sons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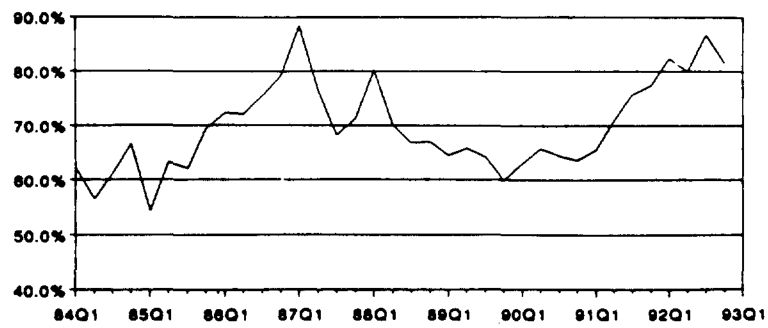
40.0%
84Q1 85Q1 86Q1 87Q1 88Q1 89Q1 90Q1 91Q1 92Q1 93Q1
Source: Alex. Brown & Sons

US WEST
Dividend Yield Relative to the US 10 Year Treasury Yield



Source: Alex. Brown & Sons

Figure 9

REGIONAL HOLDING COMPANY OVERVIEW
Comparative Valuation Tables

		Cal. 1993E Debt Lever.	*Cal. 1993E Div. Payout*	*Cal. 1993E IGR (5)*
Ameritech	AIT	0.377 x	*69.8%*	*5.9%*
Bell Atlantic	BEL	0.472	*77.6%*	*4.2%*
BellSouth	BLS	0.334	*76.3%*	*3.0%*
NYNEX	NYN	0.412	*70.3%*	*4.1%*
Pacific Telesis	PAC	0.385	*74.1%*	*3.7%*
Southwestern Bell	SBC	0.367	*63.3%*	*5.5%*
US West	USW	0.439	*66.5%*	*5.2%*
GTE	GTE	0.624	*82.6%*	*3.5%*

Note 5: Implied Growth Rate= Return on Equity (ROE) x (1- Dividend Payout)

Source: Alex. Brown & Sons

INDUSTRY OVERVIEW

Digital technology has revolutionized the processing and transmission of information over the last several decades. As the cost of moving information falls at an accelerating rate, it is breaking down the traditional barriers among the Computer, Media and Communications industries and creating new competition and new opportunities.

The prime movers of the changing telecommunications landscape are:

- companies in search of new markets, such as,
  - telecommunications services companies and other utilities looking for opportunities to grow and to replace businesses lost to new competitors;
  - media and entertainment companies looking to leverage content into new markets; and
  - software and hardware companies looking to tap unserved users.
- policy makers who have to satisfy consumers' and industry participants' conflicting demands for,
  - access to advanced technology and new services;
  - protection from monopolistic business practices;
  - national competitiveness in a global economy; and
  - low prices.

Technology and competition are driving telecommunications industry change.

- Technology is rapidly driving down the cost of transmitting information. This accelerating decline is being facilitated by:
  - the replacement of traditional copper and coaxial cable infrastructure by fiber optics;
  - the increasing bandwidth capabilities of the existing copper and coax infrastructure using digital technologies;
  - the availability of high-quality, high-capacity, private wireless transmission technologies.
- Competition is emerging in the telecommunications industry as these new technologies break down the traditional rationale for "natural monopolies" and regulators seek to allow market

forces to determine prices and services in this previously highly regulated industry.

Market Forces

Technology and competition are creating a confluence of five very large U.S. industries: Communications, Media, Entertainment, Consumer Electronics, and Information Technology (see Figure 10). Some of the most important new business opportunities may develop in the areas of overlap, such as interactive video, video over telephone networks, telephone services over cable networks, and electronic information services. These trends create both enormous risks and opportunities for telecommunications service providers, particularly as the LECs. In an environment of greatly expanded capacity and access, the LECs will be competing for:

- The potentially multibillion-dollar consumer markets for entertainment, communications, information, and education;

- A share of the existing $150 billion mature voice communications markets.

Confluence of Market Forces

Industry	Market Size (In billions)
Communications	$200
Entertainment	$150
Education	$240
Information	$50
Publishing	$100

Source: Alex. Brown & Sons

Technology

We believe the critical technological challenges and opportunities faced by the LECs are: the deployment of broadband platforms for video services in their wired infrastructure, and PCS (personal communications services) for wireless narrowband applications. The speed with which the telcos can deploy these new technologies may largely determine their ability to protect their existing customer franchises and add new revenue streams to replace traditional local access revenue lost to new competition. The importance of rapid broadband deployment is being driven mainly by:

- inroads made by CAPs (Competitive Access Providers) for high-capacity business traffic; and

- the announced intentions of cable television (CATV) companies to upgrade their broadband networks to provide switched-access to consumers.

The critical broadband technology issues for the telcos are:

-- the degree to which advances in compression technology that will allow broader band applications over the existing infrastructure appropriate to meeting the needs of significant segments of the user market;

-- the rapidly falling cost of fiber and the rate at which fiber can be deployed close to the home;

-- how quickly broadband capabilities can be deployed by the RBOCs versus the rate at which new competitors can introduce new services;

-- the cost of upgrading the existing telco plant to provide broadband capabilities versus the CATV companies costs of upgrading to provide switched services.

Wireless technologies threaten traditional narrowband voice and data revenues. New digital technologies (such as CDMA), allow much greater capacity over wireless infrastructure, along with toll-quality voice and privacy. With these technologies, wireless narrowband services can eventually be offered at small premiums to current wired telephone rates. Although deployment of PCS must await regulatory licensing of new spectrum and service providers, several LECs are moving aggressively to introduce wireless services on their cellular spectrum in order to preempt some of the new competition while creating new sources of revenue. Appendix C illustrates what some of the new networks may look like.

INVESTMENT THESIS

Investors considering the LECs should focus on five significant competitive factors that drive earnings, cash flow and capital spending requirements. The interaction of these factors determine the ability to pay and grow dividends, the key valuation criteria for most current shareholders. These include:

-- core network modernization and digitization to reduce costs, improve reliability and provide a platform for a wide array of new access services;

-- the timing and deployment of broadband capability to support video services for consumers and businesses;

-- the timing and deployment of new wireless-access services to respond to competition and open new markets;

-- demographic characteristics of the carriers geographic franchise that can act as an entry barrier (to some degree);

-- foreign investment for long-term growth.

The biggest determinant of the performance of these stocks over the next decade is likely to be the ability to pay and grow the dividend. The ability of each LEC to maintain and grow its dividend is likely to be affected very differently by these five factors. We have rated US West a "buy" because we believe it is the best positioned LEC with respect to these five factors.

Broadband Deployment

The broadband deployment plans of the LECs are very different. We believe investors should focus on those companies that intend to push broadband capability aggressively into their regions because broadband services and capabilities may be important to capturing some of the most attractive new revenue streams. Below we have summarized of the broadband network deployment plans of the LECs. We would not be surprised to see competitive pressure push telco broadband to 30% of the homes by 1998, roughly half the penetration of CATV (see Figure 5). The LEC broadband deployment strategies are summarized as follows:

-- **Ameritech (AIT)**--has committed to having 95% of its customers within two miles of a broadband, video-capable feeder (or the central office) by the end of 1995. The cost of this program is already built into our capital expenditure estimates. The total cost of deploying interactive video capability into its network is estimated to be around $1,000 per subscriber. However, Ameritech believes it can offer services selectively to subscribers without having to wire entire neighborhoods to gain one subscriber. Ameritech is convinced that niche marketing strategies for video are likely to fail and is preparing for full competition with CATV in all service offerings. The critical issue yet to be resolved is how to connect the customer to the network. Should the final link into the home be fiber-optic, coaxial, copper cable wire, or wireless?

-- **Bell Atlantic (BEL)**--in contrast to Ameritech, is deploying broadband capability using a niche strategy. It has been among the most vocal in advocating its broadband, interactive-video capabilities and expects to be offering commercial, interactive switched video in late 1994, with a substantial ramp-up in 1995-96. Bell Atlantic, unlike Ameritech, is more likely to deploy a variety of technologies to serve selected niche markets, including Asynchronous Digital Subscriber Line

(ADSL), which the company says it can use as a bridge toward full broadband to selectively "cherry-pick" cable customers in individual neighborhoods for half the price of full broadband deployment. Bell Atlantic appears to have about as aggressive a broadband penetration schedule as any of the LECs and is likely to be among the first to feel significant new competition.

-- **BellSouth (BLS)**--has current plans and a capital spending budget that reflects a build-out of broadband capability in about 2013. BellSouth's deployment plans are possibly influenced by the low population density in its territory. However, we are concerned that competitive pressure from new telephony service providers will not allow Bell South to wait that long; we believe there is at least a possibility that it will have to ramp up spending in response to new entrants, which could put pressure on its ability to pay its dividend without borrowing.

-- **NYNEX (NYN)**--believes its future is entirely tied to broadband deployment because it believes the voice business will flow to the most efficient broadband service provider. We agree. NYNEX's strategy is to convert about 5% (500,000) of its access lines per year to video-broadband capability. Our concern is that competition for a wide variety of access services (voice, video and data) is likely to be felt the keenest in the major metropolitan areas that comprise the majority of NYNEX's territory. We are concerned that regulation and competition may not allow the company such a long capital-spending plan for broadband service introduction. However, NYNEX may be well-positioned to speed up deployment if market conditions demand it (see Figure 5).

-- **Pacific Telesis (PAC)**--recently announced plans to have 50% of its access lines converted to broadband video capability by about 2003. Pactel may speed up, or slow down, this schedule depending on perceived demand. However, only about $200 million per year of the expected cost of the broadband deployment is assumed in the consensus current capital expenditures assumptions. Pactel intends to avoid an overbuild strategy, if it can, and is likely to execute a joint-venture strategy to offer video broadband to the home.

-- **Southwestern Bell (SBC)**--places primary focus on bringing broadband services to businesses to compete against the CAPs and then leveraging the business base investment into residential entertainment offerings. However, the Company's broadband strategy into the home is as yet undecided. Southwestern Bell is anxious to see the cable/telco cross-ownership restrictions lifted and appears the most likely of the LECs to execute an acquisition strategy to acquire broadband video capability to residences and recently acquired two cable franchises in the Washington, D.C. area.

-- **US West (USW)**--has the most pessimistic view of the future competitive landscape. The company's strategic view plans for at least two broadband wires into every home by the year 2000. US West's strategy is to be a cost-competitive provider of broadband networks to content providers. The company is among the most aggressive deployers of broadband capability and plans to convert 500,000 lines per year to an interactive broadband video network. The company expects the new network to cost about $1,000 per subscriber. We believe this strategy may present some unusual opportunities because, while the company may have high broadband network penetration as soon or sooner than anyone, we expect it to face competition later than probably any of the other RBOCs because the low density and geographic terrain of its franchise make it less attractive to new competitors.

-- **GTE Corporation (GTE)**--is unlikely to attempt to build a broadband network itself because most GTE markets are rural. The company's strategy seems to be to team with cable companies to provide packages of services. To the extent that broadband is deployed, the first focus will be on servicing business customers as a competitive response to the CAPs.

Wireless Strategy

The Clinton Administration appears ready to move new wireless-spectrum and service-provider licensing ahead as fast as possible because it sees telecommunication equipment manufacturing as a source of new jobs and expects competition to result in lower prices and better service for consumers. Therefore, we believe regulators will move aggressively to use PCS as a principal way of introducing competition into the local loop. In the meantime, the shape and scope of future PCS services must await action by the FCC on spectrum, which is expected later this year. We believe Bell Atlantic, Pactel, US West and GTE have PCS strategies that we find particularly compelling--

- They are moving ahead aggressively with plans to offer PCS services using cellular spectrum, assuming that the FCC will not allow them to have new spectrum where they have cellular spectrum;

- They believe cellular is PCS ("cellular" is a PCS product) and, by using CDMA in the cellular band, they will be able to match any service/price offerings of new competitors;

- They agree with our view that PCS is likely to be near-term competition for cellular growth and are aggressively planning for the new entrants. US West believes that new PCS services could capture as much as 50% of the anticipated growth in cellular.

- They also expect PCS to pose a major threat to traditional, wired-access revenues over time.

Geography

In Appendix A, we summarize the general geographic franchises of the LECs for both wireline and wireless markets. We suspect that the ability of new competition to enter markets will vary greatly by region; companies like US West will be among the last to feel significant competition because of their low geographic population density, while NYNEX and Bell Atlantic will be among the first.

If significant competitive pressure develops as we expect, perhaps putting dividend payouts at risk, investors who must be invested in the RBOCs may want to rotate to those companies that are likely to be faced with significant competition later rather than sooner. However, in the long term, those faced with competition first, may be the first to recover and adapt. If so, over the next decade, or so, some investors could develop a rotation strategy whereby they move into those RBOCs where the dividend is the safest and then, as competition intensifies in the less concentrated areas, rotate into the companies that faced competition soonest and were able to adapt and recover.

Foreign Investment

All of these companies have foreign investments, however, BellSouth seems to have the most aggressive foreign investment strategy. We believe that investors should focus on those companies that concentrate on preserving their home geographic franchise, such as US West. Investments that develop revenues on the existing core network are likely to have a more positive profit impact if market-share erosion and price reduction exceed a carrier's ability to reduce costs. If so, new sources of network revenues are required to protect profits and fuel growth. Although foreign investments may ultimately be profitable businesses, they also use up capital and managerial resources needed to find replacement revenues in the traditional networks.

FACTORS AFFECTING COMPANY PERFORMANCE

There is a significant risk that some, or all, of the LECs may go through a period of underperformance over the next several years. As we pointed out in our *Bandwidth Bonanza* report dated February 1993, the communications industry is going through a period of unprecedented change and the confluence of very powerful market forces. Despite their best efforts, the service providers could see a significant erosion of revenues and margins because--

- Network capacity is likely to expand faster than the demand for content expands to fill it, which will put pressure on transport and access pricing.

- Regulators appear intent on introducing significant new competition into the local access markets and, because access network costs are largely fixed, new competitors may exert significant downward pressure on revenues by taking market share and driving down prices.

- The LECs may lose revenues to new competitors faster than they can cut costs and replace those revenues with new services.

Investors that are concerned about these risks and not required to maintain a position in the RBOCs may wish to avoid the area and instead invest in the secular change in the industry now underway by focusing on:

- the differentiated providers of content; and

- the providers of technology that stand to benefit by the introduction of new competition.

There appear to be three major uncertainties to our investment thesis that are difficult to quantify at this time, but which are likely to have a significant impact on the performance of these stocks over the next several years:

- **the timing of the introduction of competition and its possible impact on dividends;**
- **the shape and scope of future regulation; and**
- **the future demand for new services and the price points at which customers will use them.**

- **Dividend Risk**--Competitive pressure could force a cut, or elimination, of dividends over the next 3-5 years as numerous new competitors enter the market and take share from existing service providers. Under such a scenario, the LECs may be forced to invest much faster and more heavily than expected to meet competitive threats to the customer base (see Figure 5), make acquisitions to replace lost revenue, or cope with