



Strategic Partnerships (cont)

- **IXC Communications:** In May 1999, NorthPoint announced that it was selected by IXC as its preferred provider of national SDSL services.
- **@ HOME:** @Work agreed in June 1998 to sell NorthPoint's services to small and medium-sized business customers. In March 1999, the company entered into an amended agreement with @Work in which @Work established targeted volume commitment levels and agreed to jointly develop and implement marketing programs to expand the demand for @Work DSL lines supplied by NorthPoint.
- **Cable & Wireless:** In March 1999, NorthPoint signed a two-year agreement in which it was designated as C&W's preferred IDSL provider in the US.
- **Concentric Networks:** In April 1999, Concentric committed to purchase a targeted volume of DSL lines over the two-year term of the strategic agreement. Concentric also agreed to use NorthPoint's services in 20 metropolitan areas.
- **Intel:** NorthPoint entered into a strategic relationship with Intel and is working with Intel to enhance its service offerings.

Strategic Partnerships (cont)

- **Frontier:** In April 1999, Frontier designated the company as a preferred provider of DSL services. In addition, NorthPoint will jointly undertake development of new products and systems interfaces.
- **Network Plus:** In March 1999, NorthPoint was designated as Network Plus' preferred provider of DSL lines. Network Plus also committed to purchase a targeted volume of DSL lines.
- **Netopia:** In April 1999, Netopia designated NorthPoint as the preferred provider for its small business DSL Education Center and DSL Affiliate Program on the GeoCities Internet Portal website.
- **Tandy:** Under the terms of the five year agreement, NorthPoint was designated as a preferred provider of xDSL services to RadioShack customers in the markets the company serves. NorthPoint has agreed to install xDSL connections to the RadioShack stores in which it will offer service.
- **Enron:** In April 1999, Enron entered into a strategic product distribution agreement with NorthPoint. NorthPoint will enable its networks to deliver Enron's advanced, broadband applications to end users on the companies networks.



Months in Operation

- Established in Fall 1996.

Customer Reach

- Offers DSL services to ISPs and enterprise customers. Covad currently offers services in 21 major metropolitan areas and plans to build networks and offer services one additional metropolitan area representing a total of 51 metropolitan statistical areas nationwide.
- Covad's market penetration is extensive. It has collocated in 534 central offices, more than any other DSL provider. Expectations are for 1000 collocations by year end 1999. That puts them in 22 metro regions, 51 metro statistical areas which represents 26.3 million homes and 2.6 million businesses.

Growth Rate

In six months ending 6/30/98, the company had \$995,000 in revenue. In six months ending 6/30/99, the company brought in \$16.4 million. Morgan Stanley expects revenues to be \$56 million in 1999 and \$163 million in 2000.

Capital Infrastructure

The principal capital expenditures incurred in regional buildup involve:

- Procurement, design and construction of central office cages.
- End user DSL line cards.
- Regional data center in each region.

Following the build out of central office, a major portion of capex is success based:

- Used to purchase DSL line cards to support incremental users.

General: Expect that average cost of line cards will decline over the next several years and Network expenditures will increase with the number of end users. However, once an operating region is fully built out, a big part of capex will be tied to incremental customer and end user growth.

Total Capex for six months ending 6/30/99 was \$93.7 million. Expects this to grow substantially.

Customer Focus

Covad is a data competitive CLEC focused on providing DSL services primarily through ISPs to businesses and consumers as well as directly to enterprise customers.



Service Offering

Recurring:

- Monthly recurring service charges for connections from the end-user to facilities and for backhaul services from facilities to ISP or enterprise customer.

Nonrecurring:

- Service order set up

Other:

- Sale of customer premise equipment typically unavailable through retail channels.
- Expect prices for the major components of both recurring and non-recurring revenues to decrease each year in part due to the effects of competitive pricing and future volume discounts. Also believe that revenues from sale of customer premise equipment will decline over time.

Summary:

- Covad offers 3 types of DSL: asymmetrical, symmetrical and integrated. Each has a different speed capability and price.

Service Offering (cont.)

For the Home

- **Telesurfer:** Basic high-speed access designed exclusively for the home
- **Telespeed:** Extra power and performance for home users who push the limits
- **Teleworker VPN:** Connect with your company network from your home office.

For Small Business

- **Telespeed:** Boost productivity, connect multiple users through a single line, and send files as rapidly as receive them - with guaranteed reliability.

For Business

- **Telespeed:** Industrial-strength speed and guaranteed levels of service that rival T-1 performance
- **Branch Office VPN:** Securely link multiple offices together
- **Teleworker VPN:** Connect offsite employees to your network and the Internet



Service Offering

Customer base comes from demanding industries like banking and brokerage services, high-tech manufacturing, healthcare, media, and other organizations with mission-critical networking requirements. They enjoy our full suite of flexible solutions:

- *Enterprise Telework* — A solution for people who need to work from home and connect to a corporate network at higher speeds at any hour
- *Internet Access* — An affordable and reliable solution for any size business to connect to the net
- *Branch Office Interconnect* — A solution for communication between branch offices, affiliates and the corporate network.
- **SUMMARY:** Rhythms offers 16 flavors of DSL and provides a wide range of WAN, LAN and access services. Speeds range from 128 Kbps to 7.1 Mbps. Rhythms has a broader range of products than many of its competitors. Most only offer SDSL-type service and limited speed options. Although other carriers can get there, right now, Rhythms can offer significantly more downstream capacity than competitors like Northpoint and Covad.

Value Chain Partners

Strategic Partners

- (1) **MCI WorldCom** and Rhythms are integrating high-performance local access for a variety of voice and data applications. Through the alliance, Rhythms will be MCI WorldCom's preferred supplier of DSL-based solutions. As Rhythms interconnects its high-performance network in each metropolitan area, MCI WorldCom will be its preferred provider of metro and wide area network capacity.
- (2) **Microsoft** will provide Rhythms with access to a wide range of compelling services via a co-branded MSN™ portal. Our alliance will expedite customer connections to the Internet and private networks, as well as allowing access to content that meets their business and personal needs.
- (3) Through a multi-year agreement with Rhythms, **Qwest** will offer high-performance DSL connectivity service in 31 major metropolitan markets and Rhythms will use Qwest as its preferred web hosting provider.



Value Chain Partners (cont)

Technological Partners

- (1) **Cisco** powers end-to-end DSL-based network and uses Cisco core technology, including Cisco's various series carrier-grade routers, multiplexer, access concentrators, switches and terminating units.
- (2) **Paradyne's** DSLAM and CPE platforms offer mature RADSLS implementation and flexible network models.
- (3) **Copper Mountain's** DSLAM and CPE platforms provide dense, carrier-grade solutions for SDSL and IDSL.
- (4) **Turnstone's Copper** CrossConnect systems provide copper loop testing capabilities to maintain high service levels.
- (5) **Xylan's** high-speed concentrators allow for seamless integration with DSLAM platforms and a scalable, multi-protocol, high-speed concentration capability conform to ILEC requirements for collocated CLEC equip.
- (6) **Epoch's** high-speed, dedicated and tier one DSL internet access helps Rhythms expand DSL nationwide to small and medium-size companies and unsurpassed service levels.

Value Chain Partners (cont)

Technological Partners (cont)

- (7) **Ramp Networks** meets small businesses' growing demand for broadband local access by offering DSL-based services and shared Internet access featuring WebRamp 500i.

Authorized Rhythms Partners

- Rhythms has teamed with the top sales and marketing partners to expand our network across America in record time: (a) Cisco, (b) MCI Worldcom, © Qwest Communications.

Growth Rate

In six months ending 6/30/98, the company had \$82,000 in revenue. In six months ending 6/30/99, the company brought in \$2.3 million.



Months in Operation

- Mass market DSL service introduced in October 1998.

Customer Reach

The following will be realized by end 1999:

- Total Central Offices = 700
- Total access lines served = 28 M
- Total Qualified Access Lines = 17 M
- Total Qualified Households = 8 M

Market Coverage:

Washington Metro = 99%

New York Metro = 99%

Northern Jersey = 99%

Boston Metro = 93%

Baltimore Metro = 93%

Philadelphia Metro = 78%

Pittsburgh Metro = 56%

Customer Reach (cont)

- Bell Atlantic is concentrating first on major markets to facilitate effective broad scale marketing. They have marketing agreements with approximately 40 ISPs to either sell Infospeed DSL or refer potential prospects, representing 60% of the analog dial-up lines in their footprint.



Service Offering

Bell Atlantic® Infospeedsm DSL (digital subscriber line) is a fast, flexible and affordable flat-rate transmission service that turns ordinary copper phone lines into high-speed data connections. Infospeed DSL allows you to keep all the functionality of existing telephone features (such as custom calling services) while enjoying a dedicated, high speed connection to office LANs and the internet.

Value Chain Partners

- Bell Atlantic and 3Com Corporation have forged a groundbreaking retail agreement that will -- for the first time -- provide consumers with convenient, one-stop shopping for high speed Digital Subscriber Line (DSL) service.
- In addition, Bell Atlantic has entered into partnership agreements with approximately 40 ISPs.

Customer Focus

- Bell Atlantic markets Infospeed DSL to large business, small business and individual customers.

Growth Rate

- Bell Atlantic's target is to have 100,000 DSL lines in service by the end of 1999, increasing to 500,000 by the end of 2000. Once a market reaches critical mass, they are targeting 5% penetration within 18 months and 10-15% percent of qualified customers in 3 years.
- Bell Atlantic has a 5 year projected internal EPS growth rate of 7.7% while the street estimates that the regional bell operating companies (RBOCs) are growing at a rate of 7%.



Service Offering

- Intermedia Communications has been transforming complex communications technologies into integrated, easy-to-use voice and data solutions tailored to the demanding needs of small and mid-sized business. As one of the nation's fastest growing communications companies, Intermedia offers seamless end-to-end service virtually anywhere in the world through a comprehensive portfolio of local, long-distance, high-speed data and Internet services.
- See **Customer Focus** section for more detail.

Value Chain Partners

- Intermedia supplemented its robust service offerings through strategic partnerships and interconnect agreements with every independent LEC and RBOC in the country, including Bell Atlantic, BellSouth, USWEST; Ameritech Williams Networks, Northpoint Communications and Rhythms Netconnections.
- In early August, InterMedia announced a 3 year agreement with Bell Atlantic, that will provide BA customers out-of-region data services prior to the ILEC receiving 271 relief. This agreement with BA follows last year's agreement that allowed BA to resell Intermedia's frame relay services.

Customer Focus

- The company offers a variety of services primarily small and mid-sized and large business customers:
- Local Network Services (Local Exchange Services, Special Access Services, Switched Access Services, Local Private Line Services).
- Enhanced Data Services (Frame Relay Services, ATM services, DSL Services).
- Internet Connectivity and Applications Services: InterMedia is a Tier-One ISP that operates its own internet backbone network and has established peering agreements with other ISPs to seamlessly carry traffic.
- Long Distance Services
- Integration Services.

Growth Rate

- The company has articulated specific goals to be achieved over the course of the next five years:
 - Revenue growth of 30% or more for year 2000 and beyond.
 - A CAGR of EBITDA at 80%

**Months in Operation**

Founded in 1988.

Customer Reach**US:**

Reaches 18,815 miles and connects to 150 cities across the country. An additional 315 miles will be added by the end of 1999.

Mexico: 1,400 miles.

Europe:

Partnership with KPN (KPNQwest) is building a 9,100 mile European network connecting 40 cities.

Asia:

Part of consortium building a 13,125 mile cable from California to Japan.

Through investments in Covad and Rhythms NetConnections and through their own local networks in 19 cities, Qwest is moving quickly to cover the last mile.

Customer Reach (cont)

- Qwest's full range of services has been embraced by more than 90,000 business customers nationwide.
- The company was certified as a CLEC in 38 states and DC as of 6/30/99.

Capital Infrastructure

- The 10 gigabit (OC-192) network is self-healing, using a bi-directional, switch ring SONET architecture. In addition, there is a second empty conduit laid beside the first adding capacity for nearly unlimited growth.
- Qwest believes that its network gives it a competitive advantage over AT&T, MCI WorldCom and Sprint for a few reasons: (1)Qwest has a newer generation of fiber that requires less frequent regeneration. (2)Qwest has more fiber pairs in its network than competitors and has the ability to add capacity in the spare conduit. (3)the maintenance expense on the Qwest network will be less than the older networks because it is less vulnerable to fiber cuts.



Service Offering

Business and Government

- *Dedicated Internet Access:*
- *Web Hosting:* An advanced Web hosting environment and high bandwidth connections that insure Web site performance reliability.
- *IP Collocation:* Allows customers to join the approximately two-thirds of all businesses that are now outsourcing their Internet servers.
- *Remote Access:* Virtual private networks, alternate access and other services.
- Other products for business and government: voice over IP, frame relay, private line services, long distance services, network management.

Consumer and Home-based business

- *Q. home Internet Access:* National dial-up Internet access for flat monthly rate.
- *Q. Send-A-Page:* A Web-based paging service that allows customers to send text or numeric pages to subscribers of the Qwest paging service.
- *Q. home Click-to-Conference:* A service that allows customers to set up conference calls.
- *Q. home Click-to-Fax:* U.S. and international fax service access to through a Web browser.

Service Offering (cont)

WHOLESALE SERVICES

- Qwest provides wholesale services to a wide range of customers, including local exchange carriers, inter-exchange carriers, long distance resellers, Internet service providers, and electric utilities.

Customer Focus

- *In business markets,* our core strategy is to expand with large customers who have a growing need for bandwidth. We are rapidly adding both marquis-name business customers and market share, as we create a strong base of relationships on which we are building IP-enabled applications and services.
- *In consumer and home-based businesses,* our growth is driven by the success of a complete line of communications products and services offered in simple terms at competitive prices. We are expanding and energizing our offerings with Internet products like Web-based paging, Internet calling and online faxing.
- *Our wholesale customers --* communications and Internet service providers are turning to Qwest to help them expand from switched traffic to broadband private line services.



Service Offering

- Local connectivity strategy is described as a 'mosaic' -- using fiber, DSL, fixed wireless and satellites.
- Skytel paging will be used for wireless data applications.
- WCOM will use MMDS for fixed wireless broadband in areas if DSL and fiber are not available.
- DSL is going to play big part of WCOM's offering to small/medium business outside CBD and to consumers.

Value Chain Partners

- WCOM has taken a \$30M minority stake in Rhythms Communications and is in partnership with Northpoint and Covad Communications.



Months in Operation

- Founded over 100 years ago.

Customer Reach

- Beginning in the 3rd Quarter of 1999, AT&T began rolling out DSL services in major cities around the country. AT&T plans to have services available in no less than 40 metropolitan areas by the end of 1999 and over the next twelve months will activate more than 1200 DSL 'points of presence.'
- AT&T ended 3rd Qtr 1999 with 11.4 million proforma basic cable customers. Measured against a pro forma 3rd Qtr 1998 customer base, this reflects an approximate 1.4% internal customer growth rate. AT&T's Digital cable launch continues to be extremely successful with approx. 1.7 million Digital Cable subscribers.
- At the end of the 3rd Qtr 1999, AT&T had 113,600 AT&T@Home customers.

Broadband Telephony

- AT&T is making progress in its first telephony pilot community in Fremont California, which began accepting customers in June 1999. Late in the 3rd Qtr, AT&T also began offering the service to paying customers in a pilot community in Chicago. At the end of 3rd Qtr., AT&T had in excess of 2,100 paying broadband telephony customers, the majority in Fremont. AT&T plans to continue this rollout in 1999 and thereafter.

Capital Infrastructure

- AT&T will pursue a 'buy or build' strategy. In many areas they will provide DSL over their own local access facilities, including those over the former Teleport Communications Group (which AT&T acquired in 1998). In other areas, the company will resell DSL services from a variety of facilities based providers, including COVAD.



Service Offering

- DSL services for 'retail' business customers were launched 7/30/99.
- AT&T will also offer DSL services to 'wholesale' customers, such as ISPs.
- The company will offer three flavors of DSL service: ADSL for residential users, SDSL for the business customer and IDSL for the more distant locations where the first two are not available.

Value Chain Partners

- AT&T will resell DSL services from a variety of facilities based providers, including many national DSL service providers.

Customer Focus

Retail business customers, wholesale customers (ISPs).

Growth Rate

- The company's three year growth rate as projected by the Buckingham research Group is 16%.
- The company's internal EBITDA growth rate for cable related services is impressive. Compound annual revenue growth is projected at 24% and EBITDA at 28% through 2004.



Months in Operation

- The company is the result of a merger between Excite, Inc. and @Home Network in January, 1999 -- at the time, the largest Internet company merger ever. The merger officially closed on May 28, 1999.

Business Summary

- At Home is the largest initiative for offering very fast, persistently connected Internet service to consumers over cable infrastructure.

Customer Reach

- At Home stands as the leader in providing broadband Internet access, with 460,000 subscribers and exposure to cable television systems covering 2/3 of American households (as of March 1999).
- The company has exclusive relationships with 21 cable multiple systems operators (MSOs) passing 65 million homes.

Capital Infrastructure

- The 10 gigabit (OC-192) network is self-healing, using a bi-directional, switch ring SONET architecture. In addition, there is a second empty conduit laid beside the first adding capacity for nearly unlimited growth.

Customer Focus

At over 460,000 customers, At Home boasts a 3.1% penetration rates of homes passed.



Value Chain Partners

- At Home has almost exclusive relationships with 21 MSOs in North America and abroad.
- AT&T, as a result of its acquisition of TCI, is At Home's largest shareholder, with a 26% economic interest and 58% voting control (post-Excite merger). AT&T's market and brand power should prove beneficial to the proliferation of At Home service. AT&T's influence will be influential in increasing the likelihood of At Home mergers with **RoadRunner** and **AT&T Worldnet**.

Growth Rate

The company's subscriber base at 3/31/99 was 460,009 indicating net additions of 129,000 during that quarter. This 460,000 subscriber figure represents growth of 39% sequentially and 413% year-over-year



Service Offering

- (1) Fiber Optic Network centered in the Carolinas, with interconnecting networks extending from Washington . D.C. throughout the Southeast to Texas. They develop, manage and lease capacity on this system.
- (2) Digital, wireless Personal Communications Services (PCS) in the Charlotte Major Trading Area (encompassing most of the Carolinas and part of Northern Georgia).
- (3) Access to other Duke Energy Companies - DukeSolutions, Duke Electric Transmission and Duke Power - and their related infrastructures, electric transmission lines and rights of way.

Value Chain Partners

- CFN (Carolinas FiberNet)
- Interstate FiberNet
- BellSouth PCS
- CaroNet
- 31 Independent companies in the Carolinas

Customer Focus

- DukeNet meets the communications needs of industrial, commercial and residential customers in the Southeast by developing and managing communications systems.



Months in Operation

- Founded in 1904.

Customer Reach

- DukeNet and its partners, through participation in the CFN (Carolinas FiberNet), L.L.C. consortium, provide a 3,300-mile fiber network which covers all major North Carolina and South Carolina cities and many secondary communities in the Carolinas and Virginia. Through interconnections with Interstate FiberNet, a Georgia based company with a 4,500-mile fiber network, DukeNet offers service extending throughout much of Georgia, Florida, Alabama, Mississippi, Arkansas and Texas.

Capital Infrastructure

- **Fiber Optic Network:** See description of network in customer reach section.
- The company also offers digital, wireless Personal Communications Services (PCS) in the Charlotte Major Trading Area (encompassing most of the Carolinas and part of Northern Georgia.) The infrastructure for this service has been built out in partnership with BellSouth PCS, CaroNet, and 31 independent telephone companies in the Carolinas.



Alpha
Comm.

Final Presentation

*presented to: Alpha Executive Team
by: Wolverine Team*

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Note: "Alpha Communications" is a fictitious code name for a real telecommunications firm. "Alpha" has been used throughout this presentation to protect client confidentiality.