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ATTORNEYS AT LAW

September 29, 2004

EX PARTE – Via Electronic Filing

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: *Implementation of the Local Competition Provisions of the
Telecommunications Act of 1996, CC Docket No. 96-98;
Intercarrier Compensation for ISP-Bound Traffic, CC Docket No. 99-68;*

Dear Ms. Dortch:

On September 29, 2004, on behalf of Level 3 Communications LLC (“Level 3”), I met with Dan Gonzalez, Senior Legal Adviser to Commissioner Martin. In the meeting, we discussed the legal issues with respect to the scope of the Commission’s authority under Sections 251(b)(5) and 252, as set forth in my letter on behalf of Level 3 dated September 13, 2004, as well as the practical issues raised by a Section 201 only approach, as further set forth in my letter on behalf of Level 3 dated September 10, 2004 (CC Docket Nos. 96-98, 99-68). Other points made in my presentation are summarized in the attachments hereto.

I further stated that the Commission should not pursue a hypothetical legal theory in which it would find that Section 252(d)’s pricing standards did not apply to any services that fell within the Commission’s Section 201 jurisdiction. Such an approach would potentially lead to different prices for interconnection, unbundled network elements and transport and termination, based on whether a call or facility was wholly intrastate or jurisdictionally mixed.

I also stated that, in Level 3’s view, the most appropriate statutory classification of ISP-bound traffic was as “telephone exchange service,” rather than as “exchange access.” The Commission recognized as much in *General Communication Inc. v. Alaska Communications Systems Holdings, Inc.*, 16 FCC Rcd. 2834, 3848 (2001), *affirmed in part and rev’d in part, ACS of Anchorage, Inc. v. FCC*, 290 F.3d 403 (2002), in which the Commission found that ISP-bound traffic was “local exchange service, of which ISP services are a part pursuant to the ESP exemption.” As the D.C. Circuit recognized in *GTE Service Corporation v. FCC*, 224 F.3d 768, 775 (D.C. Cir. 2000), “the Commission may characterize as ‘exchange service’ even services that, like CMRS, do not use exchanges.” I provided Mr. Gonzalez with the attached documents.

Ms. Marlene H. Dortch
September 29, 2004
Page 2 of 2

In accordance with the Commission's rules, I am filing this letter electronically in the docket identified above.

Sincerely,

/s/

John T. Nakahata

Enc.

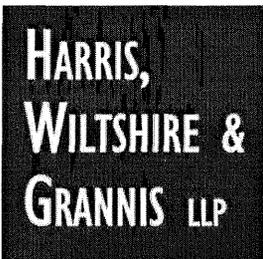
**ISP-Bound Traffic (and Other Locally-Dialed Traffic
To an Information Service Provider) is “Telephone Exchange Service”**

Calls to locally-assigned NPA-NXX codes are “telephone exchange service.”

- The “ESP exemption” was a classification decision finding that Enhanced Service Providers (now “Information Service Providers”) are “classified as end users for purposes of the access charge system,” *Access Charge Reform*, First Report & Order, [cite] ¶ 348 (1997), -- “no different from a local pizzeria or barbershop.” *ACS of Anchorage, Inc. v. FCC*, 290 F.3d 403, 409 D.C. Cir 2002).
- “Telephone exchange service” is defined as either “(A) service within a telephone exchange, or within a connected system of telephone exchanges within the same exchange area operated to furnish to subscribers intercommunicating service of the character ordinarily furnished by a single exchange, and which is covered by the exchange service charge, or (B) comparable service provided through a system of switches, transmission equipment or other facilities (or combination therefore) by which a subscriber can originate and terminate a telecommunications service.”
- Indisputably, a call from a calling party to a pizzeria or barbershop that purchases a local business line in the area “covered by the exchange service charge” is “telephone exchange service.” It is a call from one end user to another “within a telephone exchange, or within a connected system of telephone exchanges” with the call “covered by the exchange service charge.”
- Under the ESP classification as an “end user,” a call from a calling party to an Internet Service Provider (or other Information Service Provider) that purchases ISDN-PRIs or other state-tariffed business services from the ILEC within the same area “covered by the exchange service charge.” It is also a call from one end user to another “within a telephone exchange, or within a connected system of telephone exchanges” with the call “covered by the exchange service charge.” This is true even if the ISP then cross-connects the ISDN-PRI to a long-haul private line to carry the communication to a distant server.
- The same is true when the Internet Service Provider (or other Information Service Provider) purchases its business service from the CLEC rather than the ILEC. The call is still a call from one end user to another “within a telephone exchange, or within a connected system of telephone exchanges,” or a “comparable service,” with the call “covered by the exchange service charge.”
- The addition of the alternative definition of “telephone exchange service” as “comparable service provided through a system of switches, transmission equipment or other facilities (or combination therefore) by which a subscriber can originate and terminate a telecommunications service” – which was added by the 1996 Act – makes clear that “telephone exchange service” is not tied to the ILEC’s exchanges or even the use of an “exchange” at all. As the D. C. Circuit has explained, “the Commission

may characterize as ‘exchange service’ even services that, like CMRS, do not use exchanges.” *GTE Service Corp. v. FCC*, 224 F.3d 768, 775 (D.C. Cir. 2000).

- The Commission recognized that ISP-bound traffic is “telephone exchange service,” in *General Communication Inc. v. Alaska Communications Systems Holding, Inc.*, 16 FCC Rcd. 2834, 2848 (2001), *aff’d in relevant part and rev’d in unrelated part*, *ACS of Anchorage Inc. v. FCC*, 290 F.3d 403 (D.C. Cir. 2002). In that case, an ILEC’s argued that the Commission cannot require ILECs to separate costs related to ISP-bound traffic to the intrastate jurisdiction because the Commission had exercised jurisdiction over such traffic as jurisdictionally mixed (i.e., containing both interstate and intrastate communications, and therefore within the Commission’s Section 201 jurisdiction). The Commission explained that, when an ILEC originates traffic bound to an ISP, “the ‘operation at issue here is local exchange service, of which ISP services are a part pursuant to the ESP exemption. Local exchange service is provided under intrastate tariffs.” *Id.* In that decision, “local exchange service” can only be synonymous with the statutory term “telephone exchange service.”



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September 13, 2004

By Electronic Filing

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th St., SW
Washington, D.C. 20554

Re: Developing a Unified Intercarrier Compensation Regime, CC Docket No. 01-92; Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, CC Docket No. 96-98; Intercarrier Compensation for ISP-Bound Traffic, CC Docket No. 99-68

Dear Ms. Dortch:

The purpose of this letter, filed on behalf of Level 3 Communications, LLC, is to outline a legal basis under which the FCC could conclude that ISP-bound traffic falls within both Section 201 and Section 251(b)(5), but nonetheless establish rules, particularly further interim rules, governing compensation for the exchange of ISP-bound traffic between a LEC and another telecommunications carrier.

Section 201(a) grants the Commission authority over “physical interconnections” of “common carrier[s] engaged in interstate or foreign communication by wire or radio.” ISP-bound communications are jurisdictionally interstate because it is not “practically and economically possible to separate interstate and intrastate components” of such communications. *See, e.g., Petition for Declaratory Ruling that Pulver.com’s Free World Dialup is Neither Telecommunications Nor a Telecommunications Service*, Memorandum Opinion and Order, WC Docket No. 03-45, ¶ 20 (2004). Accordingly, prior to adoption of the 1996 Act, the Commission had authority under Section 201 to establish both pricing standards and specific rates governing the exchange of ISP-bound traffic among LECs. Of course, the FCC did not actually exercise that authority because, except in a few states, CLECs did not exchange switched traffic with

ILECs prior to the 1996 Act, and there was no established statutory right to termination compensation.

Section 251(i) expressly reaffirms the Commission's pre-existing authority under Section 201 regarding intercarrier compensation for the exchange of interstate traffic, including ISP-bound traffic. Section 251(i) provides that "[n]othing in this section shall be construed to limit or otherwise affect the Commission's authority under section 201." The Conference Report on the Act specifically elaborates: "New subsection 251(i) makes clear the conferees' intent that *the provisions of new section 251 are in addition to, and in no way limit or affect, the Commission's existing authority regarding interconnection under section 201 of the Communications Act.*" H.R. Conf. Rep. No. 458, 104th Cong., 2d Sess. at 116 (1996) (emphasis added).

Section 251(i)'s significance was widely acknowledged following adoption of the 1996 Act, particularly in the context of the FCC's pricing jurisdiction with respect to CMRS providers. A number of such providers (and potential providers) pointed out that Section 251(i)'s preservation of the Commission's pre-existing authority under Section 201 would enable the Commission to use its Section 201 authority to establish CMRS-LEC interconnection rates, rather than relying upon Sections 251 and 252. *See, e.g., Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, 11 FCC Rcd 15499, ¶ 1017 & n.2403 (1996) (citing numerous comments to that effect). Moreover, the Commission expressly acknowledged Section 201 (and Section 332, to the extent necessary to establish jurisdiction over intrastate traffic) as "a basis for jurisdiction over LEC-CMRS interconnection." *Id.* at ¶ 1023. In short, just as Section 251(i) preserves the FCC's pre-1996 Act pricing jurisdiction with respect to CMRS providers, it also preserves the FCC's pre-1996 Act pricing jurisdiction with respect to interstate traffic. *Cf. Iowa Utilities Board v. FCC*, 120 F.3d 753, 800 & n.21 (8th Cir. 1997) (leaving in place the Commission's pricing rules governing CMRS carriers, notwithstanding vacatur as to other carriers).

Section 252(d)(2) sets forth specific substantive standards applicable to the determination of just and reasonable compensation for the transport and termination of telecommunications pursuant to Section 251(b)(5). 47 U.S.C. § 252(d)(2)(A) (intercarrier compensation "shall not" be considered "just and reasonable unless" such terms and conditions comply with the 252(d)(2) standards). Any rules or rates governing intercarrier compensation for ISP-bound traffic established by the FCC pursuant to its Section 201 authority would, accordingly, have to be consistent with Section 252(d)(2)'s more specific substantive definition of "just and reasonable" in the reciprocal compensation context. So long as any Section 201 pricing determinations made by the FCC comport with those substantive standards, however, section 252(d)(2) is satisfied.¹ The FCC could then choose to implement these federal rates through other Title II mechanisms, such as tariffs, or it could simply recognize that terms and conditions for reciprocal compensation prescribed by FCC rule, including ISP-bound rates, will be reflected in the

¹ Pursuant to the final sentence of Section 201(b) and 251(d)(1), the FCC can also prescribe pricing methodologies, including "bill-and-keep," for all Section 251(b)(5) traffic that does not also fall within Section 201(a). *See AT&T v. Iowa Utility Board*, 525 U.S. 366, 384-5 (1999).

interconnection agreements reviewed and approved by state commissions pursuant to Section 252. In the latter circumstances, of course, the state commissions' role in "arbitrating" prices for ISP-bound traffic would properly be limited to ensuring that agreements reflect the Section 252(d)(2)-compliant prices determined by the FCC.

Moreover, the FCC may also, on an interim basis, provide for a reasonable transition to Section 252(d)(2)-compliant rates, particularly to the extent that it views state-arbitrated rates as established for non-ISP-bound traffic as inadequately reflecting the Section 252(d)(2) standard.² The Commission could also provide interim rules to govern during the time necessary to complete such an evaluation. The impending submission of the ICF Plan, which provides such a transition for *all* traffic, including ISP-bound traffic, further supports a reasonable interim and transitional rule.

Accordingly, the FCC could conclude that ISP-bound traffic falls within both Section 201 and Section 251(b)(5), but nonetheless establish rules, particularly interim rules, governing compensation for the exchange of ISP-bound traffic between a LEC and another telecommunications carrier.

Respectfully submitted,

/s/ John T. Nakahata

John T. Nakahata
Counsel for Level 3 Communications, LLC

cc: Austin Schlick Jeff Dygert
Chris Killion Tamara Preiss
Rob Tanner Steve Morris
Victoria Schlesinger Jane Jackson

Christopher Libertelli Dan Gonzalez
Scott Bergmann Jessica Rosenworcel
Matt Brill

² The Commission suggested as much in its 2001 *Intercarrier Compensation NPRM*, 16 FCC Rcd 9610 (2001).

September 10, 2004

EX PARTE – Via Electronic Filing

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: *Implementation of the Local Competition Provisions of the
Telecommunications Act of 1996, CC Docket No. 96-98;
Intercarrier Compensation for ISP-Bound Traffic, CC
Docket No. 99-68;*

Dear Ms. Dortch:

On September 8, 2004, Mr. Bill Hunt and Ms. Cindy Schonhaut, both of Level 3 Communications LLC (“Level 3”), and I met with the following individuals from the Wireline Competition Bureau: Jane Jackson, Associate Bureau Chief; Victoria Schlesinger; Jeremy Miller, Assistant Division Chief, Competition Policy Division; Tamara Preiss, Division Chief, Pricing Policy Division; Steve Morris, Deputy Division Chief, Pricing Policy Division; and Monica Desai.

In the meeting, we discussed the following issues on behalf of Level 3:

- The Commission must provide a clear method in which the terms and conditions for intercarrier compensation for ISP-bound traffic can be set, and to establish the obligation of the originating carrier to pay compensation to the terminating carrier. If this is not done through the 252 interconnection agreement arbitration process, then terminating carriers must have an option such as tariffing (or its functional equivalent) in which the terminating carriers can establish terms and conditions and under which the originating carrier becomes obligated to pay. The Commission should not fall into the trap of assuming that “negotiations” will establish those rates and terms, as ILEC market-power will allow the ILEC to dictate such terms.

- If the Commission concludes that ISP-bound traffic is interstate, and thus within the Commission's jurisdiction under Section 201(a) (regardless of whether the traffic is also within the scope of Section 251(b)(5)), the Commission should make clear that state decisions regarding ISP-bound foreign exchange traffic are preempted. There is no statutory basis for permitting states to apply intrastate access rates to interstate traffic, and states have no authority to determine the scope of interstate access rules.
- The Commission should also make clear that, even if the Commission concludes that ISP-bound traffic is interstate and that therefore the FCC can set intercarrier compensation rates pursuant to Section 201 (whether in combination with Section 251(b)(5) or standing alone), states continue to have jurisdiction to arbitrate, at a minimum, all disputes regarding an ILEC's 251(b) and (c) duties other than the rate-related terms prescribed by the FCC. For example, Section 251(c) entitles a requesting carrier to, inter alia, interconnection with the incumbent LEC's network "for the transmission and routing of telephone exchange service and exchange access," which includes ISP-bound traffic. 47 U.S.C. § 251(c)(2). Even if the Commission were (erroneously) to conclude that ISP-bound traffic were outside Section 251(b)(5), the traffic would still be covered by Section 251(c)(2). Thus, ILECs would continue to have an obligation to provide Section 251(c)(2) interconnection, and states would continue to arbitrate any disputes over such interconnection. Although the FCC addressed this issue in footnote 149 of its 2001 *ISP Remand Order*, substantial litigation subsequently ensued at the states, with states becoming very confused regarding their jurisdiction to arbitrate interconnection disputes involving "interstate" traffic. The Commission should clarify footnote 149, and make extremely clear that its conclusions regarding intercarrier compensation pricing for ISP-bound traffic do not affect an ILEC's interconnection or other obligations pursuant to statute or FCC rule.
- Furthermore, the Commission should make clear that notwithstanding any conclusion that ISP-bound traffic is interstate in nature or regarding the scope of Section 251(b)(5), CLECs may use 251(c)(2) interconnection trunks to exchange ISP-bound traffic with ILECs. Labeling traffic as "interstate" does not mean that interstate access tariffs automatically apply.
- Finally, the Commission should make clear that states should not deny CLECs serving ISPs access to local telephone numbers on the grounds that ISP-bound traffic is interstate and not "local," as some states have done.

Taking these steps will help to minimize the litigation that will inevitably follow issuance of a further remand order.

Marlene H. Dortch
September 10, 2004
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In accordance with the Commission's rules, I am filing this letter electronically in the dockets identified above. If there are any questions, please contact the undersigned.

Sincerely,



John T. Nakahata

cc: Jane Jackson
Victoria Schlesinger
Jeremy Miller
Tamara Preiss
Steve Morris
Monica Desai
Christopher Libertelli
Matthew Brill
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DSL Economics I: Continued Broadband Adoption to Drive 22% DSL Revenue Growth Through 2008

Ticker	Rating	CUR	10/14/2003 Closing Price	Target Price	YTD Rel. Perf.	EPS			P/E			Yield
						2002A	2003E	2004E	2002A	2003E	2004E	
SBC	O	USD	21.40	30.00	-40.3%	2.24	1.64	1.53	9.6	13.0	14.0	5.3%
VZ	M	USD	31.50	38.00	-38.0%	3.05	2.57	2.31	10.3	12.3	13.6	4.9%
BLS	M	USD	23.59	29.00	-28.1%	2.09	2.04	1.95	11.3	11.6	12.1	3.9%
Q	M	USD	3.67	6.00	-45.9%	-0.40	-0.30	-0.13	NM	NM	NM	0.0%
SPX			1049.48			47.95	52.75	55.50	21.9	19.9	18.9	1.6%

O – Outperform, M – Market-Perform, U – Underperform

Highlights

This Research Call is the first in our series examining the economics of DSL from the RBOC perspective. This call sets up our current forecast for the consumer broadband market and DSL, specifically by outlining the subscriber and pricing assumptions underlying our industry models and RBOC forecasts.

- The market for DSL services is estimated to grow 22% annually over the next five years off a 2003E base of \$2.5B. Underlying that outlook is a broadband subscriber growth forecast calling for 26% growth modestly offset by price decay averaging (5.6)%.
- We expect broadband penetration of total US households to improve from 15% in 2002 to 58% in 2008, driven by modest gains in online penetration of PC households, an improving price/performance ratio vis a vis dial-up, and internet content increasingly designed for broadband connections.
- Within the mix of on-line subscribers, DSL is expected to gain 19 percentage points of share, shifting a 17% / 7% / 76% subscriber share ratio for cable/DSL/Dial-up in 2002 to 46% / 27% / 25% by 2008E.
- We see current DSL monthly churn rates of nearly 5% – 200bp higher than cable modem rates – as temporary and driven half by poor customer targeting and post-sale follow-through and half by competitive churn. Over time, DSL churn rates will migrate toward cable modem levels of 3%, with improved customer targeting, provisioning and a better value proposition driving the gains.
- At \$2.5B, consumer DSL remains a small revenue stream in the context of the RBOCs' \$160B combined 2003E topline, accounting for little less than 2% of the total. However, over the next five years, DSL will drive greater than 15% of the RBOCs' topline growth.

Investment Conclusion

While the consumer broadband market will continue to be an important facet of the RBOCs' strategies over the next five years, it is unlikely to offer sufficient growth to offset much of the compression expected elsewhere in the companies' core wireline business. We anticipate incremental share shifts in DSL's favor – magnified by improvements in churn – to be taken positively by the market, although recent price reductions and the drag from higher subscriber acquisition costs (due to higher gross adds) will mask much of the positive potential impact. While we are neutral on the group, we maintain that investors should



exercise caution in being naked the sector as the cyclical sensitivity of telecom revenues is generally underestimated and the RBOCs are paying dividends sufficient to justify the wait for a recovery. Within that context, we recommend SBC among the RBOCs for its statistically aberrant dividend yield (both absolute and relative to the S&P), for its positive exposure to the upcoming FCC wholesale pricing (TELRIC) debate, and for its greater level of DBS-Wireline bundle integration suggesting, perhaps, a longer wait before fiber-to-the-premise spending begins (though with the concurrent risk of a negative earnings surprise if the company is successful selling bundled services). We rate SBC Outperform with a \$30 DCF-based estimate of fair value. We rate Verizon, BellSouth and Qwest all Marketperform with \$38, \$29 and \$6 DCF-based estimates of fair value, respectively.

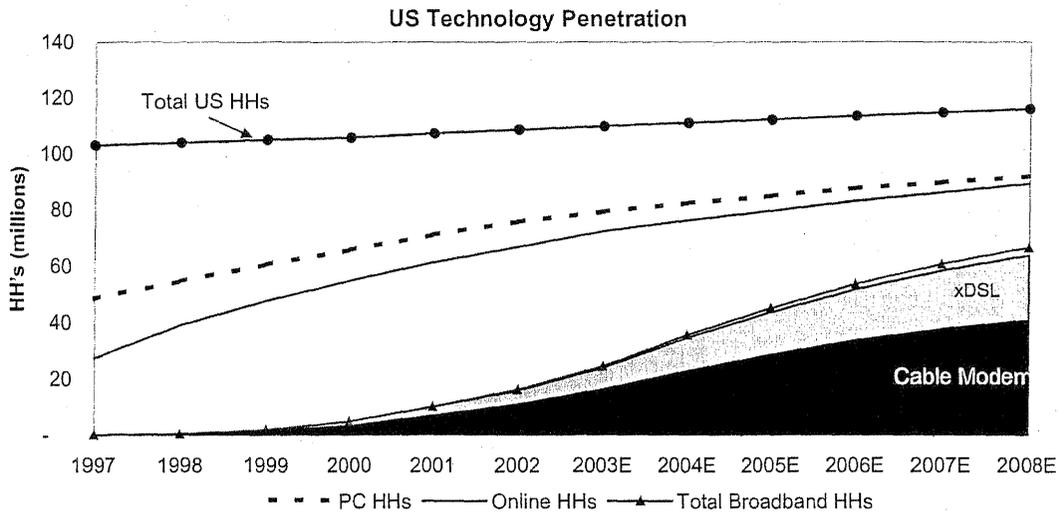
Details**Current Online Market Forecast**

As noted in our joint *Research Call* with Bernstein's Cable and Media teams on July 15, 2003 ("Broadband Market Shaping Up to be Bigger than Generally Appreciated"), we view the opportunity for consumer DSL services to be larger, faster growing and more stable than commonly believed. Over the next five years, we estimate the total market for consumer broadband services will grow at an average annual rate of 18% off an estimated revenue base of \$8.6B for 2003, with DSL gaining significant share at the expense of dial-up. Driving this outlook are two dynamics: (1) accelerating penetration rates driven by recent RBOC DSL price reductions, and (2) a shift towards websites sporting bandwidth-demanding content (e.g., streaming music videos and movie trailers) making the narrowband experience ever-more unpleasant.

Relative to penetration, continued growth in PC households will drive a technological push towards on-line services which, in turn, will translate into increased demand for broadband services. **Exhibit 1** and **Exhibit 2** show our current forecasts for PC, online and broadband penetration of US households, as well as broadband subscribers by technology. As can be seen from the exhibits, 70% of households had PCs at year-end 2002 while 88% of those claimed to have Internet access. Within the online subset of households (62% of total households), nearly 25% were using broadband access connection at year-end 2002 with fully a third expected by year-end 2003 (i.e., DSL, Cable Modem, Satellite-DSL hybrid, etc.). As **Exhibit 3** shows, we expect broadband's penetration of online households to climb steadily over the next five years reaching 73% of online subscribers or nearly 66 million households by 2008. Of the available broadband options, we expect DSL's share of subscribers to increase by no less than 500bp off a 2003 market share of 30% as the value proposition of DSL vis a vis cable and dial-up is becoming more attractive and because the carriers' target marketing and provisioning is improving, cutting churn longer-term to levels approaching those of the cable companies at ~3%.

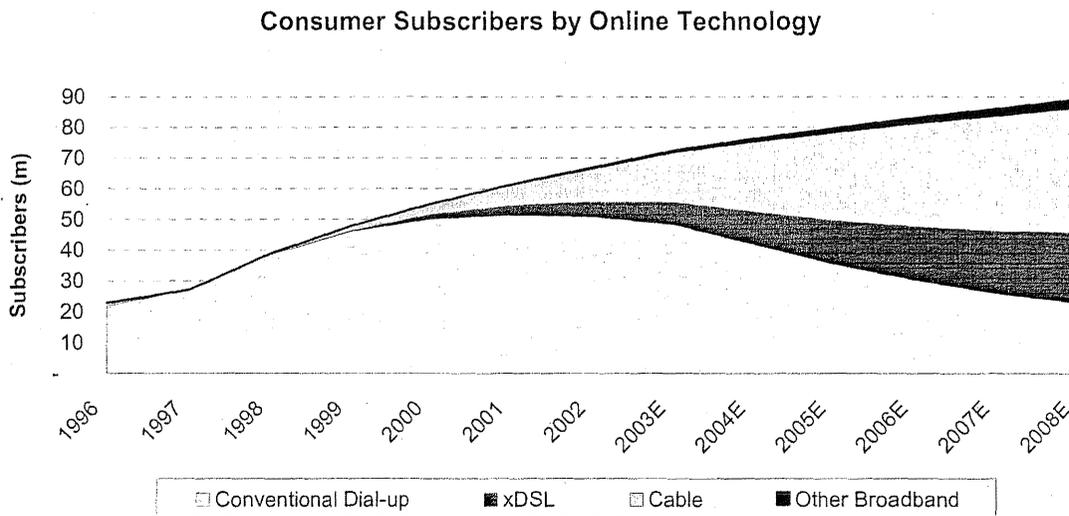


Exhibit 1
Consumer Internet Market by Connection Type



Source: Company Reports, Nielsen and Bernstein Estimates

Exhibit 2
Consumer Online Connections by Type



Source: Company Reports, Nielsen and Bernstein Estimates

Broadband Update: DSL Share Reaches 40% of Net Adds in 4Q; Overall Growth Remains Robust

Stock	4/7 Price	SCB Rating	YTD Rel. Perf.	52-Week Range	EPS			P/E		Current Yield
					2003	2004E	2005E	2004E	2005E	
BLS	\$26	M	(5)%	\$21 - \$31	\$2.07	\$2.08	\$1.89	12.5x	13.8x	31.6%
SBC	24	M	(6)	19 - 27	1.55	1.43	1.28	16.8	18.8	4.9
VZ	37	M	6	31 - 41	2.62	2.36	2.31	15.7	16.0	4.1
Q	4	O	(3)	3 - 5	(0.38)	(0.35)	(0.03)	nm	nm	-
CMCSA	29	O	(13)	27 - 36	(0.04)	0.45	0.75	64.4	38.6	-
COX	31	O	(11)	25 - 34	(0.22)	0.37	0.54	83.8	57.4	-
CVC	22	M	(6)	15 - 24	(1.04)	(1.30)	(1.18)	nm	nm	-

Overview

DSL net subscriber additions share versus cable reached 39.7% in the fourth quarter, reflecting renewed RBOC emphasis on marketing and promotion of DSL services, improvements in customer quality of service and expanded availability. We expect cable's share of broadband subscribers to fall from 67% at the end of 2003 to just under 60% in 2008, while DSL's share grows from 30% to 33%.

The consumer broadband market grew by 43% in 2003, adding seven million subscribers to bring total broadband households to 24 million. Erosion of the dial-up market continues at a rapid pace. The four largest dial-up ISPs lost a total of 900,000 narrowband subscribers during the fourth quarter, and 4.6 million subscribers for the year.

We expect continued strong growth in 2004, with the market growing by over nine million subscribers. We forecast that consumer broadband subscribers will grow at an average annual rate of 22% over the next five years, from a 2003 base of 24 million to 65 million in 2008.

We expect continued erosion of pricing for both cable and DSL, with annual ARPU declines of 5% and 8%, respectively, as bundling, promotion and tiering all contribute to lower price realization.

While we expect DSL to continue gaining share of net adds versus cable, consumer broadband is unlikely to offer sufficient upside to offset much of the compression expected elsewhere in the RBOCs' core wireline business. We remain neutral on the telecom group.

Broadband growth remains a key underpinning of continued cable revenue growth. We continue to recommend investors overweight the cable group.

Online Market Forecast

With full-year 2003 results now reported for the large broadband service providers, we have revisited our broadband subscriber penetration estimates and net add forecasts. As predicted in our last overall market forecast, *Weekly Note* July 18, 2003, "Broadband Market Bigger Than Expected," the market has sustained stronger-than-consensus growth, finishing the year at 24.1 million subscribers. As forecast, DSL has gained market share over the period on the back of more aggressive pricing and faster additions to availability. We continue to view the opportunity for consumer cable modem and DSL services to be larger, faster growing and more stable than commonly believed.

Over the next five years, we estimate the total market of broadband services subscribers will grow at an average annual rate of 22% off a base of 24.6 million in 2003, with both DSL and cable gaining significant share at the expense of dial-up (see Exhibit 1). Driving this outlook are two dynamics: (1) continued strong growth in penetration rates as the RBOCs and cable more effectively market and deliver on the value proposition of DSL and cable modem service; and (2) a shift towards Web sites sporting bandwidth-demanding content making the narrowband experience ever more unpleasant. The RBOCs will enjoy faster growth, benefiting from a smaller base, as well as continued increases to market share.

Of the available broadband options, we expect DSL's share of the installed base of broadband subscribers to increase from 30% to 33% in 2008 as the value proposition of DSL versus cable and dial-up

Exhibit 1 Consumer Internet Access Technology: Top-Down Forecast

(Million Households)	2002	2003	2004E	2005E	2006E	2007E	2008E
Online Technology — Households							
Conventional Dial-Up	50.2	48.5	43.0	37.2	32.0	27.6	24.3
xDSL	5.0	7.3	10.6	14.0	17.0	19.6	21.7
Cable	11.5	16.2	21.9	27.2	31.9	35.8	38.9
Other Broadband Online	0.3	0.6	1.0	1.4	2.4	3.4	4.6
Total Online Households	67.0	72.6	76.4	79.8	83.3	86.3	89.5
Memo: Broadband Households	16.8	24.1	33.4	42.6	51.3	58.8	65.2
Online Technology — Share							
Conventional Dial-Up	74.9%	66.8%	56.2%	46.6%	38.4%	31.9%	27.1%
xDSL	7.4	10.1	13.9	17.6	20.5	22.7	24.3
Cable	17.2	22.3	28.6	34.1	38.3	41.4	43.5
Other Broadband Online	0.4	0.8	1.3	1.8	2.9	3.9	5.1
Memo: Total Broadband	25.1	33.2	43.8	53.4	61.6	68.1	72.9

Source: Nielsen Research, corporate reports and Bernstein estimates.

improves, and the RBOCs continue to focus on service improvements and churn reduction.

DSL Continues to Grow Market Share vs. Cable

Aggregate fourth-quarter net additions for the RBOCs grew at over 42.1% year-over-year, representing an acceleration from the 31% seen in the third quarter of 2003. By contrast, cable net additions were actually down slightly (3.1)% from the year-ago period, after notching year-over-year growth of nearly 8.5% in the third quarter. Although DSL continues to lag cable in absolute number of additions, DSL's market-share gains represent a clear trend toward convergence of market share, as forecast in our July report.

DSL's share gains reflect four factors:

- A modest narrowing of cable's *gross* addition lead, based on DSL's more aggressive pricing and narrowing availability disadvantage;
- Falling DSL churn rates, as RBOC installation and service levels improve (resulting in higher net additions as fewer customers are lost to churn);
- The law of large numbers, as cable modem churn rates apply to its larger installed base (requiring an *acceleration* of gross addition share in order to maintain net addition share); and
- RBOCs continued to expand DSL-addressable homes in 2003. Though most of these infrastructure upgrades are complete, Qwest plans to expand availability from 45% to 60% in 2004.

DSL's market share gain of *gross* additions — where the battle for new customers is actually fought — reflects its lower pricing as introduced in May 2003, coupled with a narrowing of cable's historical availability advantage. We estimate that

cable's share of gross additions has fallen from 64% to 59% over the past year. Share of *net* additions continues with the same trend, but is exacerbated by improving churn rates as DSL providers have focused on customer quality of service, marketing and promotion, and expanded availability. Cable's fourth-quarter market share of net additions fell to 60.2%, from 65.5% in the third quarter of 2003, with DSL's share growing by a like amount.

Since the pricing actions from Verizon and SBC in early 2003, prevailing *à la carte* DSL rates have remained at a \$5-\$10 per month discount to cable modem service (generally \$39.99 or \$34.99 versus typical cable rates of \$44.99 per month). Over the same period, promotional rates have settled at approximately \$29.99 per month for both cable and DSL, although the Bells' "promotional" bundled discounts tend to run indefinitely versus cable's, which roll off typically in three to six months. The most interesting change over the last several months was a rise in SBC's lead-offer price at the beginning of February, from \$26.95 to \$29.95, which seems to have temporarily alleviated concerns of a price war in high-speed Internet access, despite the fact that only a fraction of SBC net adds qualified for it.

DSL's share gains also reflect a shrinking "availability gap," as forecast in our July report. At the end of the fourth quarter of 2003, broadband service was available to an estimated 92.3% of cable subscribers nationally, up 540 bp from 86.9% at the time of the RBOC price cuts (after the first quarter). By contrast, DSL's availability expanded by 790 bp over the same period, from an access line-weighted 65.7% at the end of the first quarter to 73.6% today. (Investors should note that the denominators for DSL and cable-modem service are not perfectly comparable; RBOCs' available homes approximate 100% of households, less those which