# DECLARATION OF MARIUS SCHWARTZ

**In connection with the proposed transaction, SBC intends to file a registration statement, including a proxy statement of AT&T Corp., and other materials with the Securities and Exchange Commission (the "SEC"). Investors are urged to read the registration statement and other materials when they are available because they contain important information.** Investors will be able to obtain free copies of the registration statement and proxy statement, when they become available, as well as other filings containing information about SBC and AT&T Corp., without charge, at the SEC's Internet site (www.sec.gov). These documents may also be obtained for free from SBC's Investor Relations web site (www.sbc.com/investor_relations) or by directing a request to SBC Communications Inc., Stockholder Services, 175 E. Houston, San Antonio, Texas 78205. Free copies of AT&T Corp.'s filings may be accessed and downloaded for free at the AT&T Relations Web Site (www.att.com/ir/sec) or by directing a request to AT&T Corp., Investor Relations, One AT&T Way, Bedminster, New Jersey 07921.

SBC, AT&T Corp. and their respective directors and executive officers and other members of management and employees may be deemed to be participants in the solicitation of proxies from AT&T shareholders in respect of the proposed transaction. Information regarding SBC's directors and executive officers is available in SBC's proxy statement for its 2004 annual meeting of stockholders, dated March 11, 2004, and information regarding AT&T Corp.'s directors and executive officers is available in AT&T Corp.'s proxy statement for its 2004 annual meeting of shareholders, dated March 25, 2004. Additional information regarding the interests of such potential participants will be included in the registration and proxy statement and the other relevant documents filed with the SEC when they become available.

Certain matters discussed in this statement, including the appendices attached, are forward-looking statements that involve risks and uncertainties. Forward-looking statements include, without limitation, the information concerning possible or assumed future revenues and results of operations of SBC and AT&T, projected benefits of the proposed SBC/AT&T merger and possible or assumed developments in the telecommunications industry. Readers are cautioned that the following important factors, in addition to those discussed in this statement and elsewhere in the proxy statement/prospectus to be filed by SBC with the Securities and Exchange Commission, and in the documents incorporated by reference in such proxy statement/prospectus, could affect the future results of SBC and AT&T or the prospects for the merger: (1) the ability to obtain governmental approvals of the merger on the proposed terms and schedule; (2) the failure of AT&T shareholders to approve the merger; (3) the risks that the businesses of SBC and AT&T will not be integrated successfully; (4) the risks that the cost savings and any other synergies from the merger may not be fully realized or may take longer to realize than expected; (5) disruption from the merger making it more difficult to maintain relationships with customers, employees or suppliers; (6) competition and its effect on pricing, costs, spending, third-party relationships and revenues; (7) the risk that Cingular Wireless LLC

could fail to achieve, in the amount and within the timeframe expected, the synergies and other benefits expected from its acquisition of AT&T Wireless; (8) final outcomes of various state and federal regulatory proceedings and changes in existing state, federal or foreign laws and regulations and/or enactment of additional regulatory laws and regulations; (9) risks inherent in international operations, including exposure to fluctuations in foreign currency exchange rates and political risk; (10) the impact of new technologies; (11) changes in general economic and market conditions; and (12) changes in the regulatory environment in which SBC and AT&T operate.

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**DECLARATION OF MARIUS SCHWARTZ**

I, Marius Schwartz, hereby declare the following:

1. I am Professor of Economics at Georgetown University. My background and professional qualifications are described in the initial Declaration I filed in this proceeding.[1]

2. That Declaration explained why a merger of AT&T with SBC does not threaten competition in Internet Backbone (IB) services. Specifically, the main concern raised in prior reviews of Internet-related mergers by MCI (then known as WorldCom) was that MCI, post-merger, would control such a large share of the total Internet end user base that it could profit by degrading or refusing interconnection to all competing Internet Backbone Providers (IBPs), or use this threat to force them to pay for interconnection ("de-peering" – converting an IBP from settlement-free peering to paid peering or transit customer status[2]). My initial declaration explained why that concern does not apply to this transaction. The overarching reason is that a combined SBC/AT&T — whose IB position would still fall well short of MCI's at the time of its merger reviews — would have too low a share of Internet connectivity, so that restricting its interconnection with competitors would hurt, rather than improve, its standing relative to them.

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[1] SBC Communications Inc. and AT&T Corp. Public Interest Statement, WC Dkt. No. 06-65 "Declaration of Marius Schwartz," ("Schwartz Declaration"), ¶¶ 1, 2 and curriculum vitae attached as Appendix 1.

[2] Paid peering entitles the paying network to send to the second network S only traffic destined to customers of S. "Transit" entitles the paying network to send to S all traffic regardless of its ultimate destination, whether to customers of S or to third networks that are peered with S.

3. This Reply Declaration addresses two criticisms of the above position.[3] First, merger opponents argue that the proposed merger should be analyzed in conjunction with a parallel merger of Verizon and MCI, and that the pair of combined companies would form two "mega peers" that would peer with each other but profitably de-peer (or degrade interconnection with) all others –*global de-peering*. Second, short of global de-peering, opponents contend a merged SBC/AT&T could profitably de-peer *some* of its current peers – *targeted de-peering* – also leading to higher prices for IB services. For brevity, I will use "de-peering" to encompass both the strategy of degrading or refusing interconnection if a competing backbone refuses to agree to paid peering.[4]

4. Section I below addresses the more important concern – global de-peering. Section II considers targeted de-peering. Section III concludes that the additional information available since my original declaration only reinforces those findings, that the proposed merger poses no threat to Internet backbone competition.

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[3] The argument that SBC could disadvantage Internet backbone competitors of AT&T through control of special access or other facilities that SBC provides is addressed elsewhere in the Joint Opposition of SBC Communications Inc. and AT&T Corp. To Petitions To Deny and Reply to Comments.

[4] Keep in mind that the ability to impose de-peering hinges on the ability to profit by degrading/refusing interconnection, if necessary. If the larger IBP could (a) profitably degrade or refuse interconnection, then it has a credible threat to do so unless the smaller rival (b) pays for maintained interconnection (shifts to "paid peering"). Typically, (b) will be more profitable than (a) to the larger IBP, because it captures extra payments and because degraded interconnection would harm also its customers. However, the ability to impose (b) hinges on the profitability of (a), because if (a) is not profitable then the threat to invoke (a) would not be credible. The profitability of (a), in turn, hinges on whether the larger IBP commands a sufficiently large share of the overall Internet customer base, as explained later.

## I. Global De-Peering by Two "Mega Peers"

5. My initial Declaration showed that a combined SBC/AT&T would still have too small a traffic share to possess the unilateral market power to degrade interconnection with all of AT&T's current peers or use this threat to end settlement-free peering. Indeed, no commentator has argued that this merger alone would create a backbone large enough to pose the threat of global de-peering.

6. Instead, the focus has shifted to considering a parallel merger of Verizon with MCI, and the theory that the two "mega peers" SBC/AT&T and Verizon/MCI would be large enough and similar enough that they would peer freely with each other but would engage in a parallel strategy of requiring payments from all other backbones.[5] There are good reasons to be skeptical of this parallel conduct hypothesis.[6] I will take it as given for purposes of my analysis and ask: even acting in concert, would these two merged firms command a sufficient share of the Internet end-user base to profit from global degradation of interconnection, as necessary to impose global de-peering?

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[5] Broadwing/SAVVIS comments, pp. 35, 41-42, 50; Comptel/ALTS comments, pp. 7-8. These commentators suggest that collusion between the merged entities is a real possibility. Earthlink (p .7) also urges the Commission to evaluate the SBC/AT&T merger in conjunction with one involving MCI (with either Verizon or Qwest) but does not raise the collusion issue. The plausibility of the general claim that Verizon/MCI and SBC/AT&T would engage in collusion or "mutual forbearance" is scrutinized in the Reply Declaration of Carlton and Sider.

[6] This hypothesis is far from innocuous. For example, suppose Verizon/MCI attempted to de-peer a third IBP, X, that is roughly its equal in size. (The discussion below shows there indeed are likely to remain comparable-sized IBPs even after both of the contemplated mergers.) For the strategy to succeed, Verizon/MCI must be confident that SBC/AT&T would treat it more favorably than X, because absent such discrimination, if Verizon/MCI were to end connectivity with X it would gain only a small competitive advantage over X (since they are of comparable size) but lose significantly to SBC/AT&T that maintains connectivity with all. Thus, the theory assumes that the two "mega-peers" can count on discriminatorily favorable treatment from one another.

7. I first review current estimates of traffic for AT&T, MCI and other backbones. These data establish that there are a number of significant rivals with both the network capacity and customer acceptance to serve as vibrant competitors to AT&T or MCI if good interconnection is maintained. That is, AT&T and MCI pre-mergers are *not* "well ahead of the pack." Second, and more important, I ask whether the mergers would give the combined entities a sufficient share of the *end-user customer base* that they could credibly threaten to degrade interconnection with rivals. For this purpose, it is not enough to just add Verizon's traffic to MCI and subtract it from the carriers that currently handle Verizon's traffic (and similarly for SBC and AT&T). One must also consider possible countervailing traffic shifting by large ISPs – notably, the cable companies – whose interest as purchasers of backbone services is to maintain strong IB competition.

## A. Traffic Data

8. Let me first address two criticisms that the traffic shares in Table 2 of my initial declaration understate the combined share of a merged SBC/AT&T.[7] One claim is that I failed to allow for the rapid growth in SBC's revenue or traffic.[8] In reality, my declaration explicitly considered growth in SBC's share.[9] A second claim is that I failed to "take into account SBC's

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[7] Table 2 of my initial Declaration showed, for the 4th Quarter of 2003, estimated Internet traffic shares of the largest Internet backbones (for confidentiality reasons, the companies were not named except for AT&T), based on proprietary data from RHK made available to the Commission. That Table contains an arithmetic error, that does not affect the analysis: the share of the Top 7 backbones was reported as 61.5%, but the correct figure (found by adding the individual shares reported for these top 7 backbones) is 56.5%. The original figure reported for "Others collectively" is correct, at 43.5%.

[8] Comptel/ALTS Comments, p. 36.

[9] "Even under aggressive assumptions about SBC's growth relative to other IBPs – e.g., assuming SBC's share of traffic or revenue were to increase in the next two to three years by 50

existing transit purchases form other Internet backbone providers and assign this share to the post-merger firm."[10] This criticism is half right: I did assign SBC's *entire* traffic to AT&T, but my charts did not reduce Sprint's share by the loss of SBC's transit traffic. However, the practical effect of this oversight is small. SBC's estimated traffic share of 5.8% was derived for December 2004 (by comparing SBC's total traffic then to AT&T's), at which point Sprint was SBC's only transit provider and handled only about [REDACTED] of SBC traffic.[11] Thus, Sprint's share post merger should have been reduced by about [REDACTED] of total Internet traffic [REDACTED] of SBC's 5.8%. This would not materially change the picture presented in Table 2 of my initial declaration.

9. Since filing my initial declaration, more recent and more disaggregated information has become available on the relative amounts of traffic carried by various backbones. That information, discussed next, reinforces my original conclusions.

10. Table 1 shows the list of AT&T's settlement-free peers and each peer's bandwidth (in Gbps) with AT&T on January 1, 2004 and April 1, 2005.[12] Since AT&T is one of

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percent (from 6% to 9% on traffic, and from 5% to 7.5% on revenue) without a change in AT&T's share – the extrapolated market share of the merged firm would still increase only modestly, and would be well below twenty five percent by either measure." Schwartz Declaration, ¶ 34.

[10] Comptel/ALTS Comments, p.35. See also Earthlink Comments, p. 6.

[11] The traffic shares in Table 2 of my initial Declaration, based on RHK data, are computed by measuring total traffic into a network, from both its own customers and outside networks (and dividing this total inbound traffic by an estimate of overall Internet traffic). Comparing these shares for two networks can be interpreted as measuring the relative importance of these two networks' customers as recipients (rather than senders) of traffic. In the case of Sprint, some of its Inbound traffic from SBC is destined as transit to third networks (that SBC could reach via AT&T post merger) rather than to Sprint's own customers. In December 2004 [REDACTED] of SBC's outbound traffic went to Sprint, but some of this was destined to Sprint customers, hence the [REDACTED] transit estimate used in the text.

[12] Three companies listed in Table 1 – [REDACTED] were settlement free peers for only part of the period.

the largest backbones, its traffic exchanged with other backbones gives a reasonable indication of their own relative sizes.[13] Table 2 reports, for the same two dates, AT&T's Inbound and Outbound traffic with these peers. As a partial check on whether the AT&T data is representative of the overall Internet, Table 3 reports SBC's traffic destined to or originating from AT&T and the backbones peered with AT&T.

11. The AT&T data in Tables 1 and 2 show broadly similar patterns, so for simplicity I focus on Table 1. It reveals several salient points.

a. AT&T has some [REDACTED] settlement-free peers (of which [REDACTED] were settlement-free for the entire period shown in the Tables).

b. Both [REDACTED] and [REDACTED] are larger than MCI based on their peering capacity with AT&T and their inbound or outbound traffic exchanged with it (Table 2). Based on peering capacity, [REDACTED] is more than twice as large than MCI while [REDACTED] is two thirds larger. The smallest differential is by Outbound traffic from AT&T, and even here [REDACTED] is almost fifty percent larger.

c. Aside from [REDACTED] and [REDACTED], there are a number of additional backbones that, depending on the exact measure (peering capacity, Inbound traffic, or Outbound traffic – in all cases, with AT&T), are also roughly comparable to MCI. These include: [REDACTED]. Several of these have been growing significantly faster than MCI, for example, [REDACTED].

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13 See Declaration of Susan Martens, ¶¶ 11-12.

12. How would a merger of SBC/AT&T change the above picture? In February, 2005, RHK confirmed to AT&T that Level 3's share of Internet traffic was larger than AT&T's as of May 2004. SBC's traffic is slightly under half of AT&T's (Schwartz Declaration, Table 2), and only about [REDACTED] of this is transit through Sprint (see above). Therefore, adding SBC's traffic (which is absent from Table 1 since it lists only AT&T's peers) to AT&T's would increase AT&T's share by about one half while reducing Sprint's somewhat – still hardly the sort of dramatic change that prompted the Commission's concerns in the prior MCI cases.

13. I do not have detailed data to assess the added impact of a parallel merger of Verizon and MCI. However, all public data indicate that MCI not only is no longer the dominant, or even leading, Internet backbone, but is comparable in size to a number of Tier 1 competitors . For illustrative purposes, suppose that Verizon's traffic is 70% as large as SBC's (it has 70% as many DSL customers, see section B.1 below) and that none of this traffic is carried today by Verizon itself or its merger partner MCI – so all of Verizon's traffic would represent diversion from other IBPs. Under such a "worst case scenario" the merged pairs SBC/AT&T and Verizon/MCI would still command less traffic than the total for the other AT&T peers in Table 1. Even treating the "mega peers" as a single entity, economic theory predicts that, if customer bases are otherwise alike, a share of under one half would be insufficient to make global degradation profitable for this entity (and thus, the threat of global degradation is not credible).[14]

[14] The basic reason is that if the customer base of the two two so-called "mega peers" collectively is no larger than that of the rivals collectively, refusing interconnection fails to improve the mega peers' quality *relative* to the rivals and harms their absolute quality.

14. More importantly, the above scenario overlooks a critical factor: much of the end user base now accessed through MCI or AT&T also can be shifted away from them to other IBPs by large aggregators, notably the Multiple System Operator cable companies, that – as the leading broadband ISPs – serve a considerably larger share of the Internet end-user base. As purchasers of IB services, and as competitors to SBC and Verizon for retail customers, the cable companies would have every incentive to maintain vigorous competition among backbones and, hence, to counteract any share increase of the would-be "mega peers" if such an increase threatened competition. This key issue is addressed next.

### B. Control of Connectivity to End Users

15. The theory that a backbone with the largest customer base could impede competitors by degrading the quality of their interconnection to "its" customer base or raising its price assumes two things: that much of this customer base (1) is not also connected to other IBPs (not "multi-homed") nor could add a connection at fairly low cost, *and* (2) would not switch to other IBPs if interconnection between them and the large backbone were impeded. Arguably, these conditions might apply when the customer base consists of numerous small entities. Regarding (1), adding a connection then may not be economical due to high fixed costs relative to the volume of that customer's traffic. Regarding (2), IBP customers would have a clear interest in preserving competition and could do so if enough of them switched from the largest provider, as this would eliminate its initial customer-base advantage – the very source of hypothesized market power; but a diffuse customer base may face difficult collective action problems, due to the free rider issue of who will bear the costs of switching and coordinating a

switch. As explained next, these obstacles are far lower in today's marketplace, notably due to the increased concentration in the IBPs' customer base.

### 1. Residential and Small Business Customers

16. IBPs connect directly to some end-users, such as larger business customers, universities or government agencies. They serve smaller businesses or residential customers indirectly, via ISPs (Internet Service Providers) that operate the first link to those customers and aggregate their traffic before connecting to an IBP. Opponents of mergers between IBPs and large ILECs such as Verizon or SBC center not on the consolidation of backbone facilities – since these ILECs are not among the largest backbones – but on the ILECs' role as large broadband ISPs that today can direct their end users' traffic to any IBP of their choosing but post merger would place it under the control of their IBP merger partner, expanding its customer base. In particular, an ILEC serves as the ISP to the great majority of its DSL customers (though, as we shall see, not the majority of *broadband* customers!) and these relatively small customers, in turn, are perceived as less likely to switch than larger end users. The mergers, opponents maintain, would let AT&T and MCI control a large base of "eyeball" end users that content providers must reach and that are more "sticky" than other end users. For example, Broadwing/SAVVIS writes: "If SBC-AT&T and Verizon-MCI make peering decision based on eyeball counts, they will be in the position to recognize only each other as peers. They would be able to impose . . . charges on their other competitors, thus raising their rivals' costs and undermining competition." It adds that the two merged entities will be extremely "eyeball-

heavy" networks, and would be able to monopolize eyeballs and, as a result, also eventually content.[15]

17. Putting aside whether control of eyeballs is sufficient to monopolize also content, would the two mega peers indeed acquire dominant control over eyeballs? Given the *perception* that these ILECs control a very large share of the end user customer base, this concern might seem reasonable. The natural question is whether this perception is accurate. In fact, it is not.

18. Table 4 shows the number of Internet broadband lines offered to residential and small business customers by SBC and Verizon, as well as other major providers. Typically, the company providing the broadband connection also serves as that end user's ISP and thus determines which IBP will carry the traffic.[16] Several facts are striking:

- Verizon and SBC together have a combined share of less than 28%.
- Comcast controls 7.4 million lines, considerably more than SBC's 5.6 million or Verizon's 3.9 million.
- Time Warner matches Verizon.
- Even among the smaller players, a group of five companies – Cox (2.6 million), BellSouth (2.3 million), Charter (1.88 million), Adelphia (1.4 million) and Cablevision (1.35 million) – matches the total for Verizon *and* SBC.

19. All of the above companies, as major purchasers of IB services, would have strong economic incentives to foil the "two mega peers" scenario that would raise prices for

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[15] Broadwing/SAVVIS comments, p 37; 47-48. See also pages 7-8, 50; Dovens Declaration, ¶ 22; Bortz Declaration, ¶¶ 17-19. Comptel/ALTS comments, p. 33.

[16] In a very small percentage of the cases – both for ILECs and for cable companies – the subscriber will use a different ISP, such as Earthlink or AOL. Moreover, there is not reason to believe that the use of a third-party ISP is more prevalent for cable customers than for DSL customers.

backbone services. Those cable companies that operate in Verizon's and SBC's regions would have an added incentive, because they compete with these ILECs for retail customers.

20. Furthermore, even some individual cable companies serve enough subscribers that, paired with some of the larger IBPs discussed earlier (section I.A), they have the *ability* to foil the two mega peers, by creating rival IBPs with comparable customer bases to those of a combined Verizon/MCI or SBC/AT&T. [17] For example, a decision by Time Warner to dedicate its traffic to Sprint would put Sprint on a par with a merged Verizon/MCI. Cox or BellSouth, each paired with either Charter or Adelphia or Cablevision, would match the number of customers that Verizon can deliver to an IBP partner**.** Indeed, a shift of existing cable internet traffic from AT&T or MCI to any of the other backbones could significantly alter the putative post-merger market shares.[18]

21. While DSL lines recently have grown faster than cable broadband, it is not plausible that SBC and Verizon would command a larger share than the cable companies in the foreseeable future, let alone larger than the cable companies plus other large DSL providers such as BellSouth.

### 2. Larger Business Customers

22. The above discussion demonstrates that a great majority (over 70%) of residential and small business Internet users would fall outside the domain of AT&T and MCI even after

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[17] Comcast, as the largest cable modem ISP, announced that it will build its own Internet backbone, which will reduce the shares of the IBPs that are currently carrying Comcast's traffic. *See* CED Broadband Direct News, http://www.cedmagazine.com/cedailydirect/2004/1204/cedaily041207.htm#1.

[18] Martens Declaration, ¶ 13.

their respective mergers with SBC and Verizon. The remaining question is whether these ILECs would bring under the control of their IBP partners so many other Internet end users – larger business customers not covered in the above figures – to resuscitate the mega peers scenario. Again, the answer is No, for several reasons.

23. First, although SBC's dedicated Internet Access ("DIA") traffic has been growing more rapidly than its DSL traffic, DIA still remains about [REDACTED] the size of DSL traffic.[19]

24. Second, the "hold" that any carrier has over larger Internet access customers is considerably more tenuous than over residential broadband customers. Numerous competitors provide Internet access to such customers, either on their own facilities or as intermediaries. Competitors include smaller CLECs, smaller IBPs, and system integrators.[20] Increasingly, they also include cable companies.[21] AT&T also reports increased competition for business customers from cable companies, as well as from AOL.[22]

25. These larger customers do not seem to face large costs of switching between IBPs (or between intermediaries that connect them to IBPs). Customers can retain their web and e-mail addresses when switching;[23] and as their technical sophistication has grown, so has their

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19 SBC's response to DOJ Interrogatory 13(d) lists the following capacity figures provided to these two customer groups in March 2005: DSL capacity = [REDACTED], Dedicated Internet Access capacity = [REDACTED] (the vast majority of which is business customer Internet access). I do not have access to the figures for Verizon, but I know of no reason to believe that Verizon's ratio of DIA to DSL traffic is materially higher.

20 See, for example, Declaration of Walid Bazzi, ¶ ¶ 21, 25.

21 "2004 DS-1/T-1 Disconnect Study (January – December 2004 disconnects)," Stella Park, Customer Analytics &Research, March 2005. See, especially, pp. 10, 16, 23.

22 Martens Declaration, ¶ 13.

23 *Id*.

willingness to switch. AT&T experiences considerable churn in its DIA customers – about [REDACTED] per month.[24]

26. In sum, the above facts reveal that the global degradation/de-peering scenario is unsupported and indeed far fetched. Even assuming collusion or forbearance between a merged SBC/AT&T and Verizon/MCI, those entities would still have too small a share of the Internet user base, and would face too many comparable competitors, to impose de-peering on all their current IBP peers. Those rivals would remain connected among themselves and thus offer broader connectivity than the two mega peers, by reaching more customers. Furthermore, a large share of end-user traffic is controlled by large ISPs, notably the cable companies, who could, and would, unravel the postulated two mega peers scenario by shifting their end-users to other backbones.

## II. Targeted De-Peering

27. Earthlink, a large ISP, is concerned that a merged SBC/AT&T may be in a position to de-peer an IBP like Level 3 that is Earthlink's transit provider, and the increased cost to Level 3 would ultimately raise also the price Earthlink pays for transit services.[25] Earthlink cites my initial Declaration as showing that the ratio of AT&T's Internet backbone revenue to SBC's is 3:1 and that AT&T today is not peered with SBC. It notes that the combined SBC/AT&T revenue will be more than three times larger than all but MCI's and Sprint's, and worries that as a result Level 3 would not qualify for settlement-free peering. However, Earthlink also observes: "Given that Level(3) is today a Tier 1 peering carrier, either the revenue

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24 *Id*.

25 Earthlink Comments, pp. 3-5.

shares in Table 3 do not correlate directly to the traffic shares in Table 2, or there are other factors at work in determining what companies peer in Tier 1."[26]

28. The answer to Earthlink's concern is that peering criteria indeed are *not* based on the two companies' relative Internet revenues, but on cost-driving factors such as the geographic scope of the two networks and their ratio of Inbound to Outbound traffic. All the major IBPs include such requirements in their peering policies.[27] And, as explained shortly, AT&T does peer with companies that are much smaller than SBC based on their Internet revenues and traffic, but whose network topology satisfies AT&T's cost-based peering criteria. Thus, there is no reason to think Level 3 will be de-peered on the grounds feared by Earthlink.

29. A different concern expressed is that while SBC/AT&T alone (and possibly not even with Verizon/MCI) could not de-peer all other Tier 1 IBPs, it will become sufficiently larger to profitably engage in *targeted* degradation of interconnection against some of them, or use the threat of targeted degradation to impose *targeted de-peering* (force previous peers to start paying).[28] To evaluate this argument, it is worth recalling two conditions that are both necessary for targeted degradation to be profitable.

30. First, the targeted backbone, call it TB, must be prevented from exchanging traffic with customers of the degrading firm, call it DF, by purchasing high-quality and competitively priced transit from another IBP that is peered with DF. (By hypothesis, there will be such an IBP since DF is not engaging in global degradation.) Such ability to deny becomes questionable

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26 *Id.*, p. 5, fn. 5.

27 These peering policies are described in Section VI.B of the Broadwing/SAVVIS Comments. For an explanation of the cost-based rationale of such peering policies, see generally, Martens Declaration, ¶¶ 3-10 and Rice Reply Declaration, ¶¶ 5-9.

28 Broadwing/SAVVIS comments, p. 43; Comptel/ALTS, p. 36.

if SBC/AT&T continues to be peered with several IBPs (because they will compete to attract TB as a transit customer). In turn, this is likely because even if SBC/AT&T acted in concert with Verizon/MCI, the traffic base of those not party to the mergers would still support several large IBPs (and the cable companies, as well as large business customers, will have a strong interest in ensuring such an outcome) with comparable leverage to maintain peering.

31. Second, even if transit could be blocked, firm DF still faces an uncertain profitability tradeoff. Its quality improves *relative* to TB, but TB *and* DF suffer relative to other backbones that remain peered with both, since those backbones continue to offer global access. Focusing only on the first effect gives the misleading impression that if one backbone is sufficiently larger than another, then the larger one necessarily will profit from degrading interconnection by gaining a competitive edge over the latter. This ignores the negative second effect – the loss of competitiveness against the significant number of non-degraded rivals that remain. Thus, whether measured by total traffic or other proxies for the size of the customer bases, *even a large relative size advantage over a rival is not sufficient to make targeted degradation profitable*.

32. This point is dramatized in Tables 1 and 2. A striking feature is that AT&T accepts settlement-free peering not only with Level 3, that is comparable in total Internet traffic to AT&T, but also with companies such as [REDACTED] and [REDACTED]. Their size relative to Level 3 is only 1:10 based on their peering capacity with AT&T, less than 1:13 based on the traffic they receive from it (AT&T Out traffic) and less than 1:20 based on the traffic they send to it (AT&T's Inbound traffic). Since even large size disparity is not enough to prevent de-peering today, the case has not been made that the postulated mergers, alone or in combination,

will enable these companies to engage in targeted de-peering to an extent sufficient to have a significant impact on Internet backbone pricing.

33. Finally, Broadwing/SAVVIS argue that the merger will cause anticompetitive harm due to effects on in/out traffic ratios:

> *First*, content-heavy or even balanced backbone providers like Broadwing and SAVVIS will generally have very high outgoing to incoming traffic flows with eyeball-dominant networks and will therefore suddenly fail to qualify for peering under traditional criteria. While no network has de-peered SAVVIS or Broadwing on this basis because the other networks do not want to create "black holes" for their customers, it is quite possible that AT&T and/or MCI could seize upon this imbalance to de-peer, or threaten to de-peer, SAVVIS and Broadwing for anti-competitive purposes. Indeed, it appears that AT&T has already initiated such a program. Accordingly, in the post-merger world, there is a real danger that most of the peering arrangements that currently provide for efficient settlement-free traffic exchanges will dissolve. The two eyeball-heavy merged entities will simply peer with each other and charge everyone else transit or demand paid for peering.[29]

34. This complaint is invalid at several levels. First, the core premise in the last sentence – that the mega-peers will be able to de-peer all their current IBP competitors – was shown to be false, and Internet backbone services will remain competitive. Second, since each of the four merging entities is asserted to be skewed to eyeballs as compared to a content heavy backbone like SAVVIS – though not compared to the Internet as a whole[30] – it is difficult to comprehend why the merger of two similar "eyeball heavy" networks would produce a material change in their inbound/outbound ratio with a network like SAVVIS. Third, and more importantly, due to the pervasive practice of "hot potato" routing, there are cost-based reasons for requiring a peering partner not to send much more traffic than it receives.[31] As an economist,

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[29] Broadwing/SAVVIS comments, p.49.

[30] Martens Declaration, ¶¶ 11-12.

[31] *Id.* ¶ 7. Briefly, the logic is as follows: When a data packet sent from network S to network R travels a longer distance on R, the receiving network R incurs more cost than S. To

it is not my role to opine on whether pricing based on cost is "fair"; but I do note that in today's Internet backbone marketplace – which merger opponents widely portray as competitive – major IBPs require such ratios for settlement-free peering.[32] Thus, the Broadwing/SAVVIS concern at most boils down to a complaint that its business decision to focus heavily on content customers may cause it not to qualify for settlement-free peering because its traffic ratio is outside the norm of what is acceptable in today's marketplace. This does not amount to a serious argument that the merger poses a threat to competition.

## III. Conclusion

35. Much of the concern with the effects on Internet backbone competition of an SBC/AT&T merger – in conjunction with one of Verizon/MCI – stems from a belief that the two merged companies would (a) act in unison, (b) be several times larger than any of their largest current peers *and* (c) that this size discrepancy would give the power to force current peers to pay for interconnection. Even granting the questionable premise (a), the perception that size discrepancy alone is enough to force de-peering is wrong, as shown by AT&T's willingness to peer with backbones whose share of traffic compared to AT&T's is less than one tenth..

36. Since relative size by itself is not enough, the question is whether SBC/AT&T and Verizon/MCI combined would have a large enough and "sticky" share of the end-user customer base to gain from degrading interconnection with the many IBPs that are their peers today. Even taking a "worst case" view whereby both ILECs shifts their entire customer base to

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avoid such cost disparity, network R offers settlement-free peering only to networks that have *similar geographic coverage*. Even with geographically similar networks, however, there is scope for the sending network S to practice "hot potato routing"—transfer the packet at the peering point closest to the S customer who sent the packet—if the networks have more than one peering points (which, in turn, is desired for reliability reasons). On average, therefore, a packet will travel further on the receiving network than on the sender, so R will incur higher total cost than S if R's In/Out ratio exceeds 1, i.e., if R receives more traffic from S than it sends to S.

their IBP partners *and* no other players move traffic away from those partners, the combined traffic of the two merged companies would still be less than the total traffic of the other IBPs now peered with AT&T. Thus, global degradation would not be profitable (and, therefore, invoking this threat to enforce global de-peering would not be credible), since SBC/AT&T and Verizon/MCI would forego access to more users than would their competitors, thereby reducing their quality *relative* to competitors and causing them to lose market share when competing for new customers.

37. Furthermore, the above snapshot overlooks a crucial aspect: most of the "eyeballs" customer base reflected in current traffic shares is not controlled by IBPs, but by large independent broadband ISPs – notably the cable companies, as well as BellSouth. Indeed, the main concern with these mergers appears to rest on a perception that SBC and Verizon, as the largest ILECs, control a majority of eyeballs in the form of DSL customers. In reality, their combined share of broadband lines to residential and small business customers is under 28%. And the remaining 72% is not highly diffuse, but controlled by a handful of large ISPs not parties to these mergers. Those ISPs would be harmed by a reduction in backbone competition and could undo any attempted de-peering or other monopolization strategy by shifting their eyeballs from the would-be mega peers and eroding their customer base.

38. Given these facts, the proposed mergers do not pose a threat of competitively significant de-peering or other actions that might reduce quality or raise prices of Internet backbone services.

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[32] Martens Declaration, ¶ 7 and note 2.

I declare under penalty of perjury that the foregoing is true and correct.

/s/ Marius Schwartz
Signature

May 7, 2005
Date

TABLE 1: AT&T Peering Bandwidth (Gbps)

[REDACTED]

TABLE 2: AT&T Traffic with Peers (Gbps)

[REDACTED]

TABLE 3: SBC Traffic by Originating or Destination ASN

[REDACTED]

2004 DS-1/T-1 Disconnect Study

[REDACTED]

Table 4:

Total Residential And Small Business Broadband Lines

| Name | Total # in Service (in millions) | % of Total |
|---|---|---|
| SBC | 5.6 | 16.40% |
| Verizon | 3.9 | 11.40% |
| SUBTOTAL (1) | 9.5 | 27.80% |
| Comcast | 7.4 | 21.70% |
| Time Warner Cable | 3.9 | 11.40% |
| Cox | 2.6 | 7.62% |
| Bell South | 2.3 | 6.74% |
| Charter | 1.88 | 5.50% |
| Adelphia | 1.4 | 4.10% |
| Cablevision | 1.35 | 3.95% |
| Qwest | 1 | 2.93% |
| Others | 2.82 | 8.26% |
| SUBTOTAL (2) | 24.65 | 72.20% |
| TOTAL | 34.14 | 100.00% |
| Others include: | | |
| Sprint | 0.55 | |
| Covad | 0.55 | |
| Insight | 0.37 | |
| Mediacom | 0.37 | |
| AllTel | 0.28 | |
| RCN | 0.22 | |
| Cable One | 0.18 | |
| CenturyTel | 0.17 | |
| Cincinnati Bell | 0.13 | |

Source: Company Websites or Form 10-K Reports Broadband Lines are Most Recently Reported Data For 2005 Q1 or 2004 Q4