DECLARATION OF GREG COLLINS

INTRODUCTION

1. My name is Greg Collins. I am the Director of Network Engineering and Operations for EarthLink, Inc. ("EarthLink"). I have held this position since September 2000. In this position, I am responsible for the design, implementation, and operation of EarthLink's network. Prior to my current position, I served as Director of Technical Operations for OneMain.com for one and one-half years. My educational background includes a B.S. in Electronics Engineering Technology. Overall, I have 18 years of experience in the telecommunications operation and networking fields.

2. The purpose of this declaration is to explain the factual bases for EarthLink's concerns regarding the proposed mergers of Verizon/MCI and SBC/AT&T. As an independent Internet service provider ("ISP"), EarthLink's ability to do business—as is the case for all providers of Internet-based services—is dependent on reasonable and non-discriminatory access to the facilities and transmission services used to transmit information over the Internet. These transmission services and facilities generally fall into three categories: (1) local loop or "last mile" services, (2) middle mile or "special access" services, and (3) "Internet backbone" services. "Last mile" services in the context of these mergers connect end users to the local exchange carrier's ("LEC") central office. Middle mile or "special access" circuits connect the LEC central office to the Internet service provider's various points of presence ("POPs") throughout the country and also connect those POPs to the backbone. "Internet backbone" services carry the aggregated traffic from various POPs to other, broader networks that allow delivery of the traffic to any part of the Internet.

3. EarthLink's most fundamental concern with the proposed mergers involves the vertical integration of two companies with substantial market power in the last mile markets (Verizon and SBC) with two companies with global Internet backbone assets (MCI and AT&T). Today, Internet backbone providers ("IBPs") have relatively little presence in the last mile markets for end user retail services (e.g., Internet access and Voice over Internet Protocol services). As such, IBPs have every incentive to cooperate in exchanging traffic with a broad range of other providers, because doing so increases the value of their own networks by giving them greater reach.

4. However, when large last mile providers like Verizon and SBC, which are retail providers of Internet-based services, add the global Internet backbones of MCI and AT&T, the emphasis on end user retail services makes the incentives of the merged companies different from the incentives of the previously independent IBPs that are being acquired. Instead of focusing solely on expanding the reach of their backbone networks (MCI and AT&T's pre-merger incentive structure),

the merged companies will have a new incentive and ability to discriminate against retail competitors within their respective territories in two significant ways. First, all in-region IP-based traffic that either originates from or is destined for either the SBC/AT&T or Verizon/MCI network will traverse the merged companies' Internet backbones after the merger. Once this traffic is on their respective backbones, each of the merged companies will have an incentive and an ability (in an undetectable manner) to selectively degrade the transmissions of their in-region retail competitors so as to make these competitors' services less attractive than the competing services offered by the merged companies. In doing so, the merged companies can drive end users that are dissatisfied with their current service provider to the merged companies' own services within their territory. Second, the merged companies can de-peer or threaten to de-peer either their in-region retail competitors directly (e.g., EarthLink), or the IBPs that their competitors rely on to deliver their services to end users (e.g., Level 3). With respect to both negative impacts of the proposed mergers, in addition to having a previously absent *incentive* to discriminate against backbone traffic from other providers, the merged companies will also have a greatly increased *ability* to do so after the mergers are consummated because of their acquisition of major unregulated backbone assets. I discuss below the increased technological ability of the merged companies to discriminate.

MECHANISMS FOR DISCRIMINATION

5. The most fundamental point with respect to the merged companies' technical ability to discriminate against traffic originating from retail competitors and other networks is that the routers used to receive and transmit information over the Internet are programmable to identify traffic using any number of criteria. For example, traffic can be classified by source (i.e. by provider), destination (i.e. by receiver), and protocol (i.e. web traffic, e-mail traffic, VoIP traffic). Any one of these criteria can be used by itself to classify traffic, and they may also be used in combination.

6. After identifying the traffic using any one of these criteria, a network operator could engage in several forms of discriminatory conduct. The most aggressive form of discrimination would be complete disconnection from networks that carry traffic that supports competing retail services. The result of disconnection would be a provider's complete inability to connect its end users to end users served by the merged company's backbone. Because the merging BOCs control so many end users, the relative harm of such disconnection would be greater to the retail providers using the disconnected network than it would be to the merged company's retail services. Alternatively, and probably more likely, a network operator could engage in more subtle forms of targeted degradation. Once the traffic is identified, the merged company could manipulate or prioritize the traffic crossing its backbone by creating "queues," or rules governing the transmission priority that different classes of traffic would receive. Queuing is used today to assign priority commensurate with the quality requirements of the traffic being

transmitted. Queue 1, for example (which might support a quality-sensitive VoIP service), could get top priority for all resources. The operator could then designate that, for every three packets sent from Queue 1, two packets are sent from Queue 2. Similarly, for every two packets sent from Queue 2, the operator could designate that only one packet be sent from Queue 3, and so on. Router technology routinely allows the creation of six to ten or more different traffic priority levels.

7. Traffic with a lower priority may suffer some degree of speed and/or service quality degradation. Some Internet-based services, like Voice over Internet protocol ("VoIP"), are extremely sensitive to even minor degradations of speed or service quality. Even the slightest latency periods or packet loss with respect to VoIP traffic would make the quality of such a service unacceptable to a consumer. Using the queuing method described above, a network operator could identify, for example, that incoming traffic was: (1) VoIP traffic, (2) with an EarthLink IP address, and (3) destined for a particular point on the Internet. Having made this identification, that network operator could configure its network to have this traffic moved to the last queue, which would result in those packets being sent only when all the other queues were empty. This could cause serious degradation to the service quality of that VoIP traffic. Given that it is impossible for one network to identify the queuing criteria of another network, it would be extremely difficult to detect the source of this degradation. Moreover, detection could be made more difficult by setting queuing criteria to apply only in certain circumstances, such as high-traffic periods, thus making any targeted service degradations both random and episodic. Such degradations are as effective in causing customer dissatisfaction as are persistent quality problems. Indeed, episodic problems can be more vexing to customers because of their service provider's inability to identify and correct the source of the problem. Given low customer tolerance for service failures, and given that customers typically blame their service provider for any network problems, a program of targeted and serial degradation against competitors could be quite effective in moving customers away from competing providers and onto services provided by the merged companies.

8. I have reviewed the most recent responses from SBC/AT&T and Verizon/MCI to EarthLink's merger concerns. In its August 8, 2005, filing, Verizon/MCI states that there are "technical obstacles" that make selective degradation impractical. It asserts that such a scheme would involve a massive undertaking to: (1) install hardware and software capable of identifying packets, and (2) hire and maintain a substantial staff to monitor and change routing patterns of traffic at "every conceivable point where traffic is exchanged." Verizon/MCI is incorrect for two reasons. First, that this form of discrimination is possible using existing network components is demonstrated by the Applicants' own descriptions of how backbone services work. Every provider has its own internal eligibility requirements for peering and transit relationships, such as minimum private connection speed, traffic mix and in/out traffic ratios. Therefore, no peering

arrangement could be implemented unless the amount, nature, and source of the traffic were readily identifiable. Nor could billing under transit relationships occur unless it were possible to identify discrete traffic streams. Thus, neither Verizon's nor SBC's network would require any "massive undertaking" to install additional hardware or software to identify the source of packets. Their networks are already configured to do just this. Second, Verizon/MCI's statement ignores a fundamental principle with respect to the merged companies' *incentive* to discriminate. The only place where the merged companies have an incentive to degrade services is within their own territories, where they stand to take retail customers away from their competitors. All other traffic originating or terminating outside the merged companies' territories is irrelevant. Accordingly, the "massive" undertaking postulated by the Applicants as resulting from targeted degradation of a retail competitor's traffic is unnecessary given the scope of the degradation (only selected retail competitors) and the limited geographic scope of the market in which there is incentive to discriminate.

9. In its July 26, 2005, filing, SBC/AT&T states that the combination of AT&T's backbone with SBC's last mile assets poses no danger in the Voice over Internet Protocol ("VoIP") market for three reasons: (1) the vast majority of VoIP traffic is, and will for many years continue to be, delivered via the PSTN, and not via Internet backbone-to-Internet backbone; (2) to the extent that VoIP traffic traverses an Internet backbone, the VoIP provider chooses the backbone it will use for traffic, and (3) should the merged company selectively degrade VoIP traffic, it will suffer relative to other IBPs. These statements represent both a factual misunderstanding of VoIP functionality and also a misunderstanding of EarthLink's merger concerns. I will address each of these statements in turn.

10. SBC/AT&T has spoken in abstract and conclusory terms when it states that VoIP traffic is "delivered via the PSTN, and not via Internet backbone-to-Internet backbone." It is important to understand how the networks function today and how they will function after the mergers. Today, there are a variety of routing paths for VoIP calls. Some are delivered Internet backbone-to-Internet backbone, while others travel on a single backbone before being delivered to the terminating ILEC. When an EarthLink VoIP customer makes a call to an SBC VoIP customer today, EarthLink first sends the IP call to Level 3. Level 3 takes the IP call as far as it can, at which point the packets are translated to analog and the call is sent to SBC's central office using the PSTN. At the central office, SBC converts the call from analog back to IP and delivers the call to the end user. Thus, SBC's statement above with respect to an EarthLink VoIP-to-SBC VoIP call *today* is accurate. However, the Applicants' assertion that this will be the case for "many years" is incorrect. Maintaining a call routing structure as described above undermines the efficiency of IP. Once the mergers between SBC/AT&T and Verizon/MCI are consummated, the networks will operate much differently. In the above example, the central office conversation of analog back to IP will be replaced with an IP-to-IP hand-off that will occur via Internet backbone-to-Internet backbone before delivery to the end user.

11. SBC/AT&T suggests that it will be 10-15 years before "everything in the core is VoIP." This statement is both misleading on the facts and contrary to the Applicants' own statements. Although it may take 10-15 years for *all* consumers to switch from traditional telephone service to VoIP service, it will be much sooner for a substantial number of calls to be delivered using Internet protocol ("IP"). In fact, within the next two years, I expect approximately 50% of all calls to be routed IP-to-IP. Additionally, I am aware of statements by all four of the Applicants describing the rapid rate at which VoIP services are expected to grow, which underscores their intention to transition their networks to an all-IP model as quickly as possible. For example, at the end of 2004, SBC stated that it planned to roll its VoIP service out to 18 million customers by 2007. Thus, to the extent that SBC/AT&T's statement that VoIP calls are not delivered "via Internet backbone-to-Internet backbone" is even partially true today, this reality will be short-lived, and the Applicants themselves have indicated that this is so.

12. SBC/AT&T's second statement is that, to the extent that VoIP traffic does traverse the Internet backbone, it is the VoIP provider that chooses the backbone. This statement is incorrect because it is incomplete. It is only valid so long as one uses the pre-merger VoIP model described above. Once the majority of VoIP calls are routed via Internet backbone-to-Internet backbone, there will by definition be at least two backbones involved. Using the EarthLink VoIP-to-SBC VoIP call example above, it is true that, under some circumstances, EarthLink chooses the *first* backbone (in this case, Level 3). There are circumstances, however, when even this is not the case (See Paragraph 14 for discussion of "Layer 3" service where the BOCs retain total control over the selection of IBPs). However, every call involving traffic that either originates from or is destined to a customer connected to the merged companies' networks—regardless of whether that customer is a customer of the merged company or another provider—by default will go over the merged companies' respective Internet backbones. It is the latter backbone, and not the former, that provides the merged companies an opportunity to discriminate.

13. Responding to EarthLink's degradation hypothetical in its July 15 filing, SBC/AT&T states that targeted degradation would not be profitable because both the merged company and the degraded network would suffer harm relative to other IBPs. In its July 15, 2005, filing, EarthLink stated that if SBC/AT&T disconnected a hypothetical IBP "Z," then the 1 million Cox VoIP customers served by IBP "Z" would not be able to connect to any of SBC/AT&T's 45 million voice customers. In Paragraph 4, I described two significant ways the merged companies would be able to discriminate after the mergers. One method was to de-peer or threaten to de-peer either the merged companies' retail competitors directly, or the IBPs that that these competitors rely on to deliver their services. The example with Cox above reflects this latter de-peering strategy for the purposes of illustrating one the mechanisms available to the merged companies to discriminate. Going back to Paragraph 4, the second way the

merged companies could discriminate is through selective or targeted degradation of the merged companies' competitors' services. As I stated in Paragraph 6, while complete disconnection or de-peering would indeed be *possible* after the mergers (and the relative harm between the merged companies and other IBPs is still factually in dispute), the much more *likely* form of discrimination would be targeted degradation. In this instance, the merged companies would be able to harm the incoming traffic of one of its targeted competitors (once that traffic hits the merged companies' backbones) without degrading its own outgoing traffic at all. Moreover, if the merged companies pursued a strategy of serial degradation, targeting one or two competitors at a time (depending on size), the relative degradation of service would be close to 100% for customers of the targeted retail competitor, but very infrequent for customers of the merged company. This is so because the customer of the merged company would notice a loss of service quality only when a customer of the degraded company initiated a communication. Under those circumstances, where the merged company's customer's service works except for when he or she is contacted by a customer of the degraded provider, the customer of the merged company is likely to assume that the problem is not with his or her own service, and therefore that customer is unlikely to switch service providers. The harm therefore falls almost exclusively on the targeted company.

14. Finally, in its July 26, 2005, filing, SBC/AT&T claimed that EarthLink's arguments related to discrimination with respect to Internet access services were unfounded because ILECs do not control dial-up Internet users served by other providers. This statement is factually misleading. The extent to which ILECs control dial-up Internet users is dependent on whether that ISP customer is a "Layer 2" or "Layer 3" wholesale customer of the BOC. Both Verizon and SBC today offer independent ISPs two different levels of transmission capacity for both dial-up and DSL Internet-bound traffic: a "Layer 2" product and a "Layer 3" product. For DSL, the Layer 2 product includes the local DSL-enabled loop and ATM or frame relay transport to the ILEC's central office. The Layer 3 product includes the Layer 2 functionality and adds both a central office-located DSL termination device as well as the backbone transport to the Internet. For dial-up, the Layer 3 service is commonly known as "managed-modem service." In response to SBC's claim that ILECs do not control dial-up Internet users, to the extent the ISP customer is "Layer 2" customer, then this statement is true because the ISP itself—and not the ILEC—chooses the backbone provider. However, if the ISP customer is a "Layer 3" or "managed modem service" customer, then the ISP retains no control over which backbone is selected to carry the traffic. Furthermore, if the ILEC is itself the managed modem service provider (and both SBC and Verizon provide that service), then the ILEC retains exclusive control over the dial-up Internet user's traffic, regardless of that customer's chosen Internet access service provider.

15. A review of both Verizon and SBC's pricing policies reveals an aggressive push on the part of the BOCs towards Layer 3 service for both dial-up and DSL. The

BOCs offer Layer 3 service for less than the cost of Layer 2 service (despite the added connectivity of Layer 3), making it economically impracticable for providers like EarthLink to purchase Layer 2 service. Today, approximately 70% of EarthLink's dial-up service is "managed modem service." Although today EarthLink gets much of that service from Level 3, Level 3 depends on BOC facilities to provide it. EarthLink also purchases managed modem service from MCI. All of EarthLink's Verizon DSL service is Layer 3 service, as is a substantial portion of its SBC DSL service. This trend only reinforces EarthLink's merger concerns. With Layer 3 service, the BOCs take control of the transmission at every level of the network—from the local loop to the Tier 1 backbone. Whereas today both Verizon and SBC must purchase backbone transport from another Tier 1 IBP, the Applicants have unequivocally stated that they both intend to use their own backbones after the mergers. Because ISPs that purchase Layer 3 service no longer choose their backbone provider, the combination of Layer 3 service with the Applicants' ownership and control of the backbone to which they direct their ISP customers' traffic will give the Applicants a substantially increased ability to discriminate.

16. Thus, given the technical capability that Verizon/MCI and SBC/AT&T would have to manipulate or prioritize backbone traffic seeking to cross their networks, there is a serious concern that the mergers will create both an incentive and an ability for discrimination against traffic traversing the merged companies' respective backbones. Because all Internet and IP-based traffic supporting end user retail services bound to or from the merged companies' end users does or will soon traverse the merged companies' Internet backbones, this ability to discriminate against traffic during such transit translates into an ability to discriminate directly against companies that compete with the merged companies in the retail markets for Internet-based services such as Internet access and VoIP. The fact that the source of this discrimination would be difficult to detect and the fact that there has never been any regulatory oversight of the Internet backbone make these concerns that much more serious.

POST-MERGER DE-PEERING IS A CONCERN

17. Despite the Applicants' continued statements to the contrary, there remains a large concern that the combined companies post-merger will engage in selective de-peering. This concern arises at a number of levels. Most directly, EarthLink today peers with both Verizon and SBC. EarthLink does not peer directly with either MCI or AT&T. We anticipate that after these mergers are consummated, both Verizon/MCI and SBC/AT&T will choose to de-peer with EarthLink. There are several bases for this assumption.

18. First, EarthLink has raised its concern that it will be de-peered in filings in both merger proceedings before the Federal Communications Commission. Although the Applicants have chosen to respond to several of EarthLink's statements in these proceedings, neither Verizon nor SBC has chosen to deny that it would de-

peer from EarthLink post-merger. It is therefore reasonable to conclude that, in fact, both companies would choose to do so.

19. Second, should EarthLink be de-peered by Verizon/MCI and SBC/AT&T, it would be consistent with instances of de-peering that EarthLink has encountered in the past. In the last three years, when there has been a merger involving the combination of Internet backbone assets, EarthLink has been de-peered post-merger. Furthermore, after being de-peered, EarthLink has received calls from the sales departments of these companies offering the very same service for a fee. In the recent past, EarthLink peered with Exodus, a large web hosting company, until Cable and Wireless purchased Exodus. At this time, Exodus de-peered from all of their peers, including EarthLink. This was followed by sales calls from the Cable and Wireless sales team offering to sell EarthLink Internet transit service in order to restore the quality connections previously experienced through settlement-free peering. This de-peering increased EarthLink's costs since EarthLink was forced to use paid Internet transit to reach the web sites hosted by Exodus. Other instances of companies that were purchased by IBPs which subsequently de-peered from EarthLink include Digital Island (purchased by Cable and Wireless), Allegiance Telecom (purchased by XO Communications), and Aleron (purchased by Cogent). In each of these instances, EarthLink's costs were increased in the manner described above.

20. Nor would the decision by the merged companies to de-peer with EarthLink be unique. We expect that many providers in EarthLink's position would receive the same treatment. As a result, the overall costs of doing business for a significant number of companies will rise (because they will have to pay transit to move traffic that they previously exchanged on a settlement-free basis), which will lead to an increase in consumer prices. Furthermore, the service of these providers may be degraded as direct peering hand-offs are replaced with more circuitous routings over multiple networks. Companies such as Google and Yahoo! that offer free services to customers generate revenue through advertisements on their respective web sites. It is imperative for these companies to maintain the lowest possible costs, and to present their services in the most efficient manner possible. De-peering will have a negative impact on these companies with respect to both cost and service quality.

21. EarthLink is also concerned that the merged companies will attempt to change their peering relationships with other Tier 1 IBPs. Today, EarthLink purchases all of its transit from Level 3, a Tier 1 IBP. If Level 3 is de-peered by either of the merged companies, and forced to pay for transit for services that it currently receives on a settlement-free basis, one would anticipate Level 3's costs to rise. This, in turn, will raise the operating costs of EarthLink. Ultimately, these costs will result in higher retail prices for end users. Thus, the merged companies' ability to de-peer other Tier 1 IBPs will have a direct impact on competition in the retail Internet-based service markets.

22. The Applicants suggest that, even if the merged companies engaged in some manner of de-peering, retail service providers could easily switch to another Tier 1 IBP. However, the Applicants drastically underestimate the cost and technical impacts of switching IBPs. EarthLink, for example, has set its network up to be physically close to Level 3's network. In order to switch to a different IBP, EarthLink would have to purchase special access lines to provide links at multiple points between EarthLink's internal network and the network of the new IBP. Because EarthLink's network is optimized geographically for easy interface with Level 3, but is not as well suited geographically with other Tier I IBPs, substantial amounts of special access service would be required to obtain adequate interconnection with a new network. Those special access connections are most often available only from the BOCs, the parties that would, in the example above, be causing the discrimination that would require switching to a new IBP in the first place (only, perhaps, to have EarthLink's traffic then targeted as it passes from the new IBP to the backbone(s) of the merged company(ies)). Moreover, regardless of the source, the additional special access connections (which would have to be employed on an on-going basis) are expensive. For EarthLink to switch IBPs, it would require the addition of many special access circuits. These circuits typically have higher costs on a per Mbps basis than the Internet transit services being assessed. This means that the cost for Internet transit is more than doubled for an ISP forced to use special access circuits for connections to an IBP. For EarthLink, changing IBPs would likely result in one-time expenses that exceed $2 million for fiber build-outs, and recurring charges in excess of $1 million per year. As EarthLink continues to grow its business, the recurring charges will increase and more one-time charges would be incurred.

23. Finally, as I have discussed in Paragraphs 4 and 13 above, de-peering of Tier 1 IBPs is not necessary for the anti-competitive effects of the proposed mergers to be felt. The merged companies will also be in the position to engage in targeted degradation of service provided by the Tier 1 IBPs in the manner described in Paragraphs 5-7 of this Declaration.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed this 24th day of August, 2005, in Knoxville, Tennessee.

Greg Collins