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February 2, 2007

Chairman Deborah Platt Majoras
Federal Trade Commission
Room H-135 (Annex B)
600 Pennsylvania Avenue, NW
Washington, DC 20580

Re: Broadband Connectivity Competition Policy Workshop-Comment, Project No. V07000

Dear Chairman Majoras:

The Telecommunications Industry Association (TIA) respectfully submits these comments in response to the Federal Trade Commission's (FTC or Commission) request for written comments for the Broadband Connectivity Workshop hosted by the agency on February 13 and 14, 2007. TIA commends the FTC for addressing the timely issue of broadband connectivity.

There is no single definition of "network neutrality." Generally, it refers to the principles that broadband Internet access service providers should neither hinder how consumers lawfully use the network, including what devices they attach to it, nor discriminate against content providers in gaining access to that network.[1] Some net neutrality advocates take this to a pernicious end, suggesting that all packets must be treated the same, thereby precluding even reasonable and necessary network management and discouraging innovation inside the network.

TIA has continually supported a set of principles, attached as Appendix A, that balance the rights of broadband Internet access consumers to connect to and utilize their choice of legal Internet content, applications, and devices, with the needs of service providers in a competitive market, to manage the security and functionality of their network. TIA is a leading trade association for the information and communications technology industry, with 600 member companies that manufacture or supply the products and services used to provide or access broadband-enabled services.

Notably, Robert Kahn, co-developer of TCP/IP and a central figure in the creation and development of the Internet, recently stated that he is "totally opposed to mandating that nothing interesting can happen inside the net."[2] Mr. Kahn went on, recognizing the need for network management to avoid congestion and improve traffic-flow, "So called 'neutrality' legislation posed more of a danger than

[1] U.S. Congressional Research Service. Net Neutrality: Background and Issues (IB 10045; May 16, 2006) by Angele A. Gilroy and Lennard G. Kruger, *available at* http://www.fas.org/sgp/crs/misc/RS22444.pdf.
[2] Andrew Orlowski, *Father of internet warns against Net Neutrality,* The Register (Jan. 18, 2007), *at* http://www.theregister.co.uk/2007/01/18/kahn_net_neutrality_warning/.

fragmentation."[3] Kahn is aligned with a multitude of engineers responsible for developing the Internet who believe the Internet to be too nascent to withstand certain versions of net neutrality.

TIA believes the issues surrounding broadband connectivity, including convergence, quality of service, prioritization of data, network neutrality, competition, innovation, security, and consumer protection, should only be handled by regulators in the least invasive manner possible and only when there is a clearly demonstrated need. The potential actions that any federal agency takes will ripple through industry affecting consumers, network providers, and service and application providers in ways that the public debate is only beginning to consider. Recognizing that no demonstrated need to regulate exists at this time, the marketplace should be allowed to operate with the greatest latitude in an effort to deliver the experience expected by consumers. The principles set forth below provide an evenhanded and practical approach to this debate.

The Convergence of Technologies Increases the Need for Efficient Network Management and Quality of Service (QoS).

For many Americans, the Internet is a ubiquitous part of their daily lives. Broadband penetration drives the reach of the Internet and will, ultimately, bring the advantages of the Internet to everyone, everywhere. Indeed, competing and sometimes complementary infrastructure platforms increasingly support voice, video, data and other converged multimedia services, as well as the capability to access such services at any time at any place, and with an ever-expanding array of network agnostic devices – a notion that TIA refers to as convergence.[4]

Convergence is occurring at multiple points in the network. As a result, the ability to provide quality service on a network is an important issue.[5] For example, consumers use converged technologies, such as multimedia and voice services, to expand their use of the Internet. Carriers, on the other hand, use converged technology at the core, backbone and edge portions of their network to carry traffic more efficiently. Moreover, converged services and products are being offered to the consumer at the edge of the network, *e.g.,* handheld devices and instant messaging services that offer voice, video and data capabilities. As these services and products increasingly become more available, carriers must be able to effectively manage the corresponding increased flow of network traffic.

The relationship between the network and the edge is exemplified by the offering of "triple play" services, which refers to offering voice, video, and data services over a single broadband connection. Using a single network, however, can cause congestion due to increased traffic-flow. In order to address the problems surrounding congestion, networks must use traffic management and Quality of Service (QoS) to ensure that time sensitive traffic reaches the user at the appropriate time. These traffic management systems can include traffic prioritization, which is a form of QoS, to limit packet loss of time sensitive traffic.

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[3] *Id.*

[4] TIA Broadband Agenda (2006) *at* http://www.tiaonline.org/policy/publications/white%5Fpapers/documents/TIABroadbandAgenda.pdf.

[5] U.S. Congressional Research Service. Net Neutrality: Background and Issues (IB 10045; May 16, 2006) by Angele A. Gilroy and Lennard G. Kruger, *available at* http://www.fas.org/sgp/crs/misc/RS22444.pdf.

QoS refers to the capability of a network operator to provide high-level service to selected network traffic that it views as critical and latency-sensitive over various technologies and IP-routed networks that may use a variety of underlying technologies. To ensure QoS, a network operator may create end-to-end connectivity for certain types of traffic, such as video, health care, and public safety, in instances of network congestion, this traffic will not get dropped before reaching the end-user quickly and reliably.

Much of the Internet traffic is delivered on a "best efforts" basis; best effort service is basic connectivity with no guarantees on quality or even actual traffic delivery and uses random dropping of packets when network congestion occurs. When packets are dropped, they are then resent from the originating point which can cause delay. The quality of service needed for the delivery of the currently most popular applications and services, such as email or browsing the Web, is not as demanding because minor delivery delays are essentially unnoticeable and even some network interruptions are tolerated. In comparison, other applications, such as Voice over Internet Protocol (VoIP), high-quality video services, and online gaming, require sophisticated network engineering to ensure synchronized arrival and re-assembly of packets. The quality of the application may deteriorate significantly without this careful engineering.

Moreover, in the circuit-switched world, network security was not an especially troubling issue. For the most part, the network was closed with few interconnections and those interconnections that did exist were to other closed networks. As networks have evolved, the interconnections have multiplied, the services have evolved and the underlying transport technology has evolved to TCP/IP. As networks become more open, while supporting the services and applications that transit the Internet and private digital networks, there is also increased susceptibility to worms, viruses, and so forth. To deal with such threats, network operators have developed sophisticated responses in addition to those deployed by end-users.

Network Management Needs and Policy Concerns, like Network Neutrality, are in Tension.

The increasing and demonstrated need of network operators to manage traffic, particularly in regard to certain services such as video, raises public policy concerns. Currently, the focus of this debate is "network neutrality." As stated above, there is no single definition of net neutrality, but the concept generally refers to the principles that broadband Internet access service providers should neither hinder how consumers lawfully use the network, including what devices they attach to it, nor discriminate against content providers in gaining access to that network.[6] Some net neutrality advocates suggest that even reasonable and necessary network management would be inappropriate, taking the debate to a pernicious end.

It is important to distinguish the two major issues associated with net neutrality – grade of service and source of content. Grade of service refers to the discussion above, whereby network operators give special treatment to content based on its *type*, whether voice, video, or data, due to the high-bandwidth characteristics of that traffic. As stated previously, providers seek to provide QoS guarantees to certain kinds of traffic in order to ensure a satisfying consumer experience, and net neutrality rules could, if misapplied, harm these guarantees by requiring that all traffic of any type be treated the same. The

[6] *Id. at* 1-2.

imposition of such rules would stifle investment, innovation, and competition in both the physical broadband networks and in the applications that ride over them.

The second major issue within the net neutrality debate, source of content, refers to special treatment of content based on the *source* of the traffic. Broadband Internet access service providers may consider entering into commercially negotiated agreements with content providers to ensure QoS for those content providers' higher-capacity applications, such as voice and high-quality video applications such as Internet Protocol Television (IPTV). Rigid imposition of net neutrality regulations that would require network operators to treat all packets the same without regard to the sender of the traffic, however, could frustrate the introduction of such new and innovative services. This is not only because the network operator might be unable to guarantee the necessary QoS, but also because it could undermine its incentive to deploy next-generation communications infrastructures in the first place due to uncertain return on that investment. TIA thus believes that, on balance and in the absence of demonstrable harm, policymakers should continue to refrain from interceding in the continued development of the broadband marketplace.

Incentives to Invest may Suffer.

Improperly formulated net neutrality laws could not only reduce marketplace incentives to create innovative products, but also incentives for investments. Like any other participant in a free market, network operators base business decisions on economic signals, which help determine where there is an opportunity to receive a suitable return on economic investment. The benefits of broadband deployment in a free market are investment and competition that will, in turn, enable greater bandwidth, greater competition, and lower cost to consumers. However, the preservation and improvement of network infrastructure, deployment, and maintenance are associated with immense costs and effort. Market participants are reluctant to invest in new and upgraded infrastructure when their return on their investment is uncertain. TIA recommends that the government stand back and allow competitive market forces to encourage investment and pro-competitive network management techniques to spur new services rather than impose restrictive network neutrality regulations at this time.

Indeed, competitive forces are already hard at work in this arena. Network providers are under both product and service innovation pressure and pricing pressure. They continually strive to respond sensibly and creatively to these market demands. The ability to implement tiered and differentiated pricing offerings can allow network providers to respond to these pressures and to customize service plans for consumers. Consumers have always benefited from competition, including differentiated pricing and product offerings. Broadband Internet access service is no different that any other market. Network neutrality rules that restrict such market-based responses could end up harming consumers and driving up costs because network providers will lose the incentive to maintain and upgrade their increasingly congested networks.

While sounding egalitarian, extreme network neutrality proposals, requiring all packets to be treated the same, are comparable to the common carrier notions embedded in Title II of the *Communications Act,*[7] with an accompanying comparable regulatory regime to ensure compliance. Rather than the imposition of net neutrality regulations, the government should allow competitive market forces to operate, thereby

[7] 47 U.S.C. §201 (1934).

encouraging investment, innovation in technology and service offerings and pro-competitive network management techniques

Further, TIA believes that the broadband marketplace can be vigilantly monitored and complaints of anticompetitive activity can be addressed through appropriate legal and regulatory oversight. TIA in fact has maintained that the Federal Communications Commission (FCC) has such authority today. However, as no significant evidence of a problem exists at this time, it is not now necessary to impose any net neutrality regulations. Rather, such oversight should address any such problems on a case-by-case basis in the event they arise. Of course, if anticompetitive activity occurs in this market, there are many adequate legal remedies in the competition law system to protect consumers.

Attached as Appendix A, *TIA's Broadband Internet Access Connectivity Principles* strike a balance between the rights of consumers to connect to broadband Internet and the rights of network providers to effectively manage their networks. It preserves innovation, both in the core and at the edge of the network. As the number of American consumers who connect to the Internet continually increases, so do the number of converged technologies and the need to provide rapid, high-quality service. TIA urges the FTC to foster a light-touch regulatory regime that will allow the Internet, convergence of technologies, and competition to continually advance in the telecommunications marketplace.

Sincerely,

Grant Seiffert
TIA President

cc: Sara Razi, Attorney Advisor, Chairman Platt-Majoras
Maureen Ohlhausen, Director, Office of Policy Planning

Appendix A

Broadband Internet Access Connectivity Principles

TIA has long supported the rights of broadband Internet access service consumers to connect to and utilize their choice of legal Internet content, applications and devices, while also recognizing the needs of service providers in a competitive market to manage the security and functionality of their networks. TIA reaffirms its pro-consumer principles, as outlined below, while continuing to observe that currently no significant evidence exists of these principles being abused in the marketplace. As such, it is not now necessary for the Federal Communications Commission to promulgate detailed rules in this area. Rather, the FCC should address any such problems on a case-by-case basis in the event they arise.

1. A competitive broadband Internet access market offers consumers choices with respect to "connectivity" – that is, the ability to access any lawful Internet content, and use any device, application, or service over the public Internet – so long as they do not harm the network. In particular:

   1.1. Consumers should receive meaningful information regarding their broadband Internet access service plans.

   1.2. Broadband Internet access consumers should have access to their choice of legal Internet content within the bandwidth limits and quality of service of their service plan.

   1.3. Broadband Internet access consumers should be able to run applications of their choice, within the bandwidth limits and quality of service of their service plans, as long as they do not harm the provider's network.

   1.4. Consumers should be permitted to attach any devices they choose to their broadband Internet access connection, so long as they operate within the bandwidth limits and quality of service of their service plans and do not harm the provider's network or enable theft of services.

2. A competitive broadband Internet access market also gives facilities-based broadband Internet access providers competitive incentives to undertake risky, new investments, while precluding anticompetitive behavior against unaffiliated businesses. In particular:

   2.1. Broadband Internet access service providers should remain free to engage in pro-competitive network management techniques to alleviate congestion, ameliorate capacity constraints, and enable new services, consistent with the technical characteristics and requirements of the particular broadband platform.

2.2. Broadband Internet access service providers should remain free to offer additional services to supplement broadband Internet access, including speed tiers, quality of service tiers, security and spam services, network management services, as well as to enter into commercially negotiated agreements with unaffiliated parties for the provision of such additional services.

2.3. Such network management tools would enable operators to continue to optimize network efficiency, enable new services, and create incentives for continued build-out to meet increasing capacity demands.

2.4. Broadband service providers should also remain free to innovate in the deployment of managed services, such as packaged video programming, which utilize the same networks but are distinct from public Internet access services.

TIA believes that the FCC has jurisdiction to vigilantly monitor the broadband Internet access service market and expeditiously review any complaint of anticompetitive activity. However, as no significant evidence of a problem exists at this time, it is not now necessary for the FCC to promulgate detailed rules in this area. Rather, the FCC should address any such problems on a case-by-case basis in the event they arise.