

**Before the
Federal Communications Commission
(FCC)
Washington, DC 20554**

In the Matter of)
Protecting and Promoting the Open Internet) GN Docket No. 14-28

In the Matter of)
Framework for Broadband Internet Service) GN Docket No 10-127

In the Matter of)
Technology Transitions) GN Docket No. 13-5

In the Matter of)
A National Broadband Plan for Our Future) GN Docket No. 09-51

In the Matter of)
State of Wireless Competition) WT Docket No. 13-135

In the Matter of)
Broadband Industry Practices) WC Docket No. 07-52

**COMMENTS OF
DISTRIBUTED COMPUTING
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COMMENTS

Established in 2003 as an international trade organization, the DCIA advocates commercial advancement of distributing computing technologies through such activities as business development, market research, conferences and expos, industry communications, working groups, standards setting, and related endeavors.

The success of our mission is closely aligned to the satisfaction of end-users, ranging from professionals within large enterprises utilizing solutions for their work to individual consumers accessing services for their personal use.

Our Membership has grown from two to 150 Member Companies, and today is comprised of broadband network operators, software developers and distributors, and cloud computing solutions providers and services.

This cross-section of private sector participants affords the DCIA a unique perspective, while also challenging us to find common positions among all constituencies on important and controversial topics such as Net Neutrality.

Our comments in this matter do not represent the views of our Member Companies individually or explicitly -- and indeed some may disagree with our recommendations -- but rather represent an informal consensus among DCIA participants.

Our experience has provided us with an approach for solving complex problems in this space -- joint public-private sector working groups -- made-up of affected parties, facilitated by the DCIA, constituted for periods of short duration, and tightly focused on solving specific problems.

Three examples of this include our facilitating representative software suppliers working with the Federal Trade Commission (FTC) in the Consumer Disclosures Working Group (CDWG) to avoid being characterized as spyware by employing ethical business practices; another group of companies working with the Department of Justice (DoJ) in the Peer-to-Peer Parents and Teens React OnLine (P2P PATROL) working group to provide tools for law enforcement to combat redistribution of criminally obscene content, and another assemblage of private sector organizations working with the US Congress and various federal agencies in the Inadvertent Sharing Protection Working Group (ISPG) to protect consumers from unintentionally divulging their private and sensitive data on the Internet.

We do not believe that concerns regarding Net Neutrality have risen to the level of seriousness of the issues addressed in the above examples, and in fact the Internet has been and continues to be a shining example of technological advancement, economic progress, and cultural enhancement due at least in part to the lack of heavy-handed government intervention.

If and when such problems become as widespread or as critical, however, as may become the case in the near term with the subject of our final recommendation (# 4 below), we would encourage the FCC to consider such an approach to yield a swift and fair resolution.

In any consideration of Net Neutrality, it's important to bear in mind that the Internet is not controlled by individual Internet service providers (ISPs) that connect users directly to the web: it's made up of a series of interconnected networks.

It's also essential to note the growing use of the Internet by social networks for multimedia user-generated content (UGC) as well as by over-the-top (OTT) Internet protocol television (IPTV) services for streaming high-definition (HD) professional audio/video (A/V) content.

Whether to transmit video to an end-user or to communicate via email, the digital data being transferred is packetized and traverses multiple networks before it reaches its final destination.

While slight delays do not materially impact the perceived quality of text-based and static-image communications, for streaming multimedia, packet delays are very noticeable in the form of degraded performance with anomalies that include buffering and stuttering.

Various techniques have been developed and services gradually brought forth to mitigate such delays and enhance quality, but these do not treat all data packets equally, nor should they do so in order to benefit the overall performance of the Internet among all users.

We strongly urge the FCC to take no action that would discourage the ongoing investment and innovation in many quarters of the private sector, nor the good judgment of key industry players at multiple levels that are so vital to continuing this advancement.

Here are our four recommendations.

1. Take a Holistic Approach. For whatever regulatory guidelines the FCC finalizes regarding the delivery and accessing of content, applications, and services over the Internet to be meaningful and effective, a complete and thorough end-to-end understanding of data flow is essential. This inspection needs to start at the point of origin of data packets and continue through inter-network peering arrangements,

transit providers, remote data center storage, and content delivery networks. This examination must consider the impact of techniques employed on the other parties in the distribution chain and the related economics. While important in this consideration, the way data is treated in the so-called last mile of the broadband network operator is only a part of the equation.

2. Treat Wireline and Wireless Equally. Consumers, who are the ultimate constituency for the FCC, increasingly demand greater access to content, software, and services on an ever expanding array of devices that connect to the Internet through a wider variety of access methodologies. Viewers, for example, seek to access TV programs originally developed for delivery to their static analog television sets reformatted also for their desktop computers, as well as their mobile laptops, tablets, and cell-phones applications. And conversely, users seek to access apps originally developed for their smartphones reconfigured also for their tablets, laptops, desktops, and smart TV sets. To avoid interference with technological progress and business practices to serve this growing demand for cross-platform interoperability, the FCC's regulatory guidelines should be seamlessly applicable to wired and unwired Internet access providers.

3. Continue Using a Light Touch. As noted above, the Internet is not broken and there is no overwhelming need to fix it by means of new heavy-handed government intervention or resorting to seriously outdated common-carrier classifications. Whatever regulatory standards the FCC finalizes should be in the form of overriding parameters rather than detailed regulations. The FCC must be careful not to discourage investment and innovation by unintentionally stipulating certain technological approaches while prematurely declaring others unlawful. Its focus rather should be on preventing anti-competitive behavior and unfair business practices. This can be accomplished with a regimen that combines general guiding principles with case-by-case investigations of specific alleged violations.

4. Focus on Cross-Ownership as the Area for Greatest Potential Abuse. Related to the above, the FCC should be especially vigilant in instances of content ownership by Internet access providers in the distribution channel. Vertical integration of a motion picture studio, major broadcast television network, and several cable programming services, for example, under common ownership, should be of exponentially greater concern when that owner is also a cable multiple system operator and major Internet access provider. If prevention of cross-ownership is not possible at this juncture, then extreme vigilance to ensure equitable treatment of third-party content, applications in app stores, etc. is mandated.

To hypothetically illustrate our concern informing this final recommendation, imagine the following

scenario: two competing subscription streaming sports services acquire rights to present alternate live sporting events from a league's regular season. Each arranges comparable game coverage for its offering generating technically equivalent streams from comparable access points requiring identical bandwidth and using similar variable bitrate optimizers.

One service, owned by a large broadband network operator, however, enjoys anomaly-free delivery to its customers, while the other, independently owned by a third party, consistently suffers from delays and service interruptions. What will be the impact on retention?

Above all, it's imperative that the FCC's involvement in Net Neutrality contribute to an Internet environment where content, applications, and services – regardless of ownership interest – receive equitable treatment.

In short, the ultimate driver for the FCC's proposed rule-making, in the DCIA's view, should be to ensure competition.