

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the matter of)	
)	
Preserving the Open Internet)	GN Docket No. 09-191
)	
Broadband Industry Practices)	WC Docket No. 07-52

COMMENTS OF
THE Association of Research Libraries, EDUCAUSE and Internet2

The Association of Research Libraries¹ (ARL), EDUCAUSE,² Internet2,³ NYSERNet,⁴ and ACUTA⁵ welcome this rulemaking to preserve the openness of the Internet. Higher

¹ The Association of Research Libraries (ARL) is a nonprofit organization of 124 research libraries in North America. ARL's members include university libraries, public libraries, government and national libraries. ARL influences the changing environment of scholarly communication and the public policies that affect research libraries and the diverse communities they serve. ARL member libraries make up a large portion of the academic and research library marketplace, spending \$1.3 billion every year on library materials and resources.

² EDUCAUSE is a nonprofit association whose mission is to advance higher education by promoting the intelligent use of information technology. The current membership comprises more than 2,000 colleges, universities, and educational organizations, including 200 corporations, with 15,000 active members.

³ Internet2 is a not-for-profit partnership of 208 universities, 70 companies, and 51 affiliated organizations, including some federal agencies and laboratories. Its mission is to advance the state of the Internet, primarily by operating for its members a very advanced, private, ultra-high-speed research and education network that enables millions of researchers, faculty, students and staff to "live in the future" of advanced broadband.

⁴ NYSERNet is a private not-for-profit corporation founded in 1985 by a consortium of visionary public and private New York State institutions to provide high-speed network connectivity to advance research and educational initiatives in the Empire State. In 2003, NYSERNet began an ongoing project to deploy dark fiber facilities to serve its NYC members, followed in 2005 by the launch of its statewide optical network. NYSERNet's Business Continuity Center, operational in 2007, leverages these extraordinary network facilities to provide NYSERNet's members a cost-effective means of protecting critical data and information systems. One outcome of the NYC fiber deployment was a collocation facility that is home to

education institutions and research libraries rely on the open Internet to provide access to a myriad of content, applications, and services. Not only is the open Internet important to higher education and research libraries from a practical standpoint, but the principle of openness is one that higher education and research libraries have long championed as fundamental to a free and educated society. ARL, EDUCAUSE and Internet2 support the codification of the six principles outlined in the Notice of Proposed Rulemaking (NPRM)⁶ and urge the Commission to adopt clear, enforceable rules to preserve the openness of the Internet as soon as possible.

ARL and EDUCAUSE are both members of the Open Internet Coalition, and they also endorse that Coalition's Comments in this proceeding.

I. Research Libraries and Higher Education Care Deeply About Preserving the Openness of the Internet.

Broadband Internet services are fundamentally important to research libraries, colleges and universities' ability to achieve their educational mission. Higher educational institutions have been at the forefront of developing and using advanced telecommunications, the Internet and broadband technologies since their inception. University laboratories helped to develop the Internet Protocol – the unique code that allows communications to be transmitted in packets.

Today, research libraries and higher education institutions rely on the open Internet to support the services, content, and applications they provide to the public and to their users; the services, content, and applications institutions themselves use; and the democratic values and culture that our institutions support and in which they thrive.

While resident hall rooms are wired for high-speed networking, about 80% of college students live off-campus. Increasingly, off-campus students use cable modem service or DSL to reach academic resources, and increasingly, colleges and universities expect that

the global MANLAN peering fabric, northeast nodes for Internet2, NLR, ESNNet, and the first landing point in the Americas for research data crossing the Atlantic. More information is available at <http://www.nysernet.org>.

⁵ The Association for Information Communications Technology Professionals in Higher Education is a non-profit association whose members include over 750 institutions of higher education within the United States. ACUTA members include institutions from all sectors of the higher education community, ranging from small colleges to major research and teaching institutions with greater than 25,000 students. ACUTA member representatives are responsible for managing voice, data and video communications technology services for students, faculty and staff.

⁶ *Notice of Proposed Rulemaking, Broadband Industry Practices*, GN Docket No. 09-191, WC Docket No. 07-52, released Oct. 22, 2009. (FCC 09-93). (hereinafter NPRM)

these broadband services are open and available to our students as teachers develop course materials.

Distance learning over the Internet has also become an essential feature of colleges' and universities' curriculum. Students who have never taken a college course before, who have attended college but need credits to complete their degree, who are taking additional credits in addition to traditional classes, and who are maintaining their professional education, all depend on an open and high-speed broadband connection. These online programs are especially valuable to persons with disabilities and students in rural areas that are located great distances from the college campus. Furthermore, many colleges and universities offer an extensive selection of online and mixed media courses to members of the military so that, no matter where they are stationed, they can start or continue their studies.

Colleges and universities also use networking services to interconnect campuses with very high-speed broadband connections to conduct research and experiment with new network applications. In many cases, the goal of such research is to develop applications and services that can ultimately be made available over the public Internet. Internet2 engineers are currently supporting advanced Internet applications in the fields of astronomy, digital anatomy, distance learning, nuclear physics, archaeology, music and biology, to name just a few. In sum, the availability of low-cost, high-speed, nondiscriminatory Internet services is absolutely essential for colleges and universities to meet our educational goals in the 21st Century.

Furthermore, research libraries and higher education institutions are prolific providers of content, services, and applications on the Internet. The National Science Foundation noted in 2005, "digital data collections are at the heart" of "fundamentally new approaches to research and education."⁷ Research institutions devote considerable funds to licensing electronic resources that they make available to students and faculty off-campus via the Internet. If access providers prioritize traffic containing their own content or content from affiliated or fee-paying providers, unaffiliated providers will have their content relegated to an Internet slow lane. Distance learning, telemedicine applications, and other research activities could be compromised, along with untold numbers of future applications.

Research libraries and institutions of higher education rely on an open Internet to collaborate and to obtain important services and content from outside sources. If

⁷ National Science Board, *Long-Lived Data Collections: Enabling Research and Education in the 21st Century*, (2005) at 9, available at <http://www.nsf.gov/pubs/2005/nsb0540/>.

broadband network operators can block or discriminate against some traffic, libraries and higher education institutions may find themselves in a market that is similar to the cable television market. Network operators could charge a toll not only for bandwidth, but also for access (or full access) to particular sites and services. They may decide to take some services (those that compete with their own video or telephone offerings, for example) entirely off the 'menu.' Not only will this discrimination affect access to services and content, it will affect collaboration across the Internet.

Research libraries and higher education serve the public interest. They are especially concerned that a "closed" Internet would also "close" public discourse and inhibit other core democratic values. The intellectual freedom that libraries, colleges and universities have long championed would be threatened if network operators act as gatekeepers, bar access to original, competing, or nonprofit voices, or relegate unpopular or non-commercial expression to Internet "slow lanes." This would undermine a central priority for a democratic society, an ideal made real for the first time by the open Internet: enabling educators, librarians, and, members of the public to inform themselves and each other on equal footing with major commercial and media interests.

Neutrality rules would preserve the benefits that flow from the Internet's open, democratic nature. By keeping broadband providers from discriminating, raising artificial price barriers, and stifling open debate, net neutrality will preserve the egalitarian principles that have made the Internet the most competitive market ever, for ideas as well as goods and services.

II. The Openness of the Internet Is In Danger Unless the FCC Takes Action.

At this time, there are at least four reasons to be concerned that broadband network operators and ISPs will abandon net neutrality principles in the absence of a legal requirement.

First, most broadband access providers rely on income from traditional telephone or cable TV service, which faces increasing competition from new voice and video services provided over the Internet. Network operators will therefore have ample motivation to block or degrade these Internet-based competitors in order to protect their own traditional services.

Second, the explosion of broadband traffic provides network operators a rationale to exert unprecedented control over Internet traffic moving over their networks. Internet traffic continues to grow at 50-60% per year and investment in broadband network capacity does not always keep pace. Rather than investing in additional capacity,

network operators have a strong incentive to monetize the scarcity of facilities by degrading services and charging additional fees for access to popular destinations. This practice could reduce expenses and increase revenues, while degrading the user's experience, a classic market failure.

Third, new network management technologies have made it easier to manipulate traffic. In the early days of the Internet, there was no efficient way for equipment in the center of the network to "read" the contents of packets and treat different packets differently. Network operators chose to route packets according to an open, best efforts standard. New technologies are increasingly capable of looking past the routing information and into the contents of packets. This "deep packet inspection" technology allows network operators to treat movies differently from email, VoIP traffic differently from instant messaging, and even to treat different VoIP clients differently. This technology could be exploited to allow the access provider to offer a few, pre-selected packages of content, rather than allowing *users* to decide where they go and what they do on the Internet.

Fourth, most consumers have a limited number of broadband access providers to choose from in their local market. The majority of markets have a duopoly for provision of broadband to the home (DSL or cable). Once users choose a provider, they face significant switching costs, including hefty termination fees. Most economists agree that this is not sufficient competition to drive innovation and keep prices low, particularly when cost of switching providers remains high.

III. The Net Neutrality Regime Should Apply to All Broadband Networks that Serve the General Public, But Should Not Apply to Private Networks or to End Users.

Net neutrality rules should apply to all broadband providers and ISPs that provide broadband Internet service to the general public and the rules should be sufficiently robust to protect the fundamental nature of the Internet itself.

By the same token, networks that do not serve the general public should continue to operate according to whatever principles serve the private network owner's best interest. For example, colleges and universities, much like many large businesses, operate private networks to support content, services, and applications for their specific purposes. Many of these services demand capacity that would overwhelm the public Internet. It is well established that the networks operated by research institutions are "private networks" under existing CALEA regulations, and the same logic applies in

the network neutrality context.⁸ There is a long history and tradition that private networks are not regulated, and there is no reason for neutrality rules to apply to private networks of this kind. The Commission's proposal to limit neutrality rules to those networks that serve the general public is the correct policy.

ARL, EDUCAUSE and Internet2 also support the Commission's proposal to exclude "establishments that acquire broadband Internet access service from a facilities-based provider to enable their patrons or customers to access the Internet from their respective establishments."⁹ End users such as coffee shops and libraries should be free to decide how they use their broadband services. This is consistent with the "end-to-end" principle on which the Internet was founded; control over the traffic should rest with the end user, not the public network operator.

IV. Conclusion

In sum, the availability of low-cost, high-speed, nondiscriminatory Internet services is absolutely essential for colleges, universities, research institutions, and research libraries to achieve their missions in the 21st Century. The adoption of enforceable net neutrality principles will ensure equal access for non-profit voices, encourage competition in the online content and services markets, and preserve the cultural benefits that flow from the Internet's open, democratic nature. By keeping broadband providers from discriminating against educational content and research, by barring broadband providers from raising artificial price barriers to competition, and by preserving open discourse and debate, net neutrality will preserve the principles that have made the Internet successful and transformative. We urge the Commission to adopt the six principles proposed in the NPRM and to adopt meaningful enforcement procedures to ensure that they are implemented.

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⁸ See *Communications Assistance for Law Enforcement Act and Broadband Access and Services*, ET Docket No. 04-295, First Report and Order and Further Notice of Proposed Rulemaking, 20 FCC Rcd 14989, 15006-07, para. 36 (2005). Of course, neutrality rules, like CALEA, will apply to the facilities-based providers from which research libraries obtain their Internet access.

⁹ See para. 55 of the NPRM.

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