

The End of the Net as We Know It?

Recent congressional hearings on the heretofore little-known concept of *network neutrality* prove once again that the devil is in the details. It is gratifying that the United States, which has long drifted without a policy rudder on broadband networking and has fallen behind numerous countries in broadband uptake, is now grappling with how to convert and augment our legacy communications systems to provide access to high-speed, broadband networking for all. Numerous competing companies are installing wired and wireless Internet services in both new and old venues. Many municipalities are installing their own advanced networks in a bid to support better access to education, health care, government services, commerce, and employment for their citizens and to remain competitive as communities in a “flattening” world. Telephone and cable TV companies now support a “starter” level of broadband Internet to the home and are investing heavily in upgrades to support much greater capacities in an all-digital, Internet Protocol format. The U.S. Congress is considering an overhaul of the Telecommunications Act of 1996 in an effort to promote and extend the adoption of true broadband networking by addressing thorny issues of competition, regulation, taxation, and subsidy in the light of new technologies. So, what could be wrong with this picture?

What could be wrong is that the major telephone and cable TV companies still have an effective duopoly in last-mile connections to homes and offices in most communities and will try to use this power to dictate the policies and business practices of the new broadband

Internet. This could substantially change the nature of the Internet we have come to know and love, to the detriment of both the consumers and the providers of Internet-based content and services. A case in point is the recent claim by providers of telephone-based DSL Internet that they cannot afford the investment required to upgrade their services to carry high-definition TV unless they can wall off part of their capacity to make sure that competing services do not interfere with their own programming. Taking this a step further, they claim the right to charge higher rates to content providers willing to pay for better service, in effect biasing the performance of the Internet to support the business plans of the highest bidder. Very large content providers such as Google, Yahoo!, and ESPN could, in this scenario, pay the Internet service providers (ISPs) to provide faster and better access to their own products and indeed might feel compelled to do so in a competitive market.

Introducing such a performance bias violates time-honored design assumptions of the Internet. It takes away the customers’ right to choose content and services, on an equal basis, from all that are available at a given time. It inhibits innovation by locking the large providers into positions of strength. What inventor of a new Internet product could afford, in advance of sales, to buy good performance from the ISPs to compete with already established producers? Such performance biases would also balkanize the Internet into zones controlled by different ISPs, which might behave differently with respect to similar or even identical products. This would erect unpredictable and steep barriers to new Internet applications, which

must assume a certain uniformity to succeed. The Internet could not have grown as rapidly as it did, or have supported all of its attendant innovations, if such biases had been present at the start.

As it considers the larger issue of telecommunications reform, the U.S. Congress is presently holding hearings on the network neutrality issue. The higher education community has weighed in on the side of neutrality, and against bias, as a means of protecting the free flow of information on the Internet, of defending our access to lesser-used and less-commercial content, and of avoiding the need to outbid entertainment channels to offer quality access to distance learning. In a recent hearing of the Senate Committee on Commerce, Science, and Transportation, Gary Bachula of Internet2 explained how colleges and universities have successfully deployed high-capacity broadband (100 megabits/second or more) to each student and faculty member, effectively sidestepping the scarcity claims that underpin most calls for bias. As a result, Senator Ted Stevens of Alaska has asked the ISPs to explain, in writing, why they cannot support the same capacity being offered by higher education institutions and by other countries. Although the technical path to a solution might seem clear, the result in Congress is far from certain, since powerful profit motives underlie the calls for bias. There is real cause to worry that the end, indeed, may be just around the corner.

For a collection of papers, letters, and testimony on this topic, see <<http://www.educause.edu/netneutrality>>.

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