Unleashing Waves of Innovation

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A National Broadband Strategy should include colleges and universities and the regional and national research and education networks that connect them.

1. Colleges and universities are innovation incubators.

- They house innovators—students, faculty, and staff—and are engines of innovation.
    - The academic community brought us ARPANET in the 70s, the Internet in the 80s, the graphical World Wide Web browser in the 90s, and Google and Facebook in the current decade. We would not be here today were it not for the innovation on our campuses.

2. College and university applications drive innovation in networking.

- They are the heart of demanding, advanced scientific applications. The data-driven experiments, simulations, and analyses of science today require 10-100 Gbs broadband to move data from remote instruments to the lab and to share massive data sets among scientists globally. Why does this matter? Because these scientists will help us model climate change, discover genetic markers for inherited diseases, and explore the potential of low carbon and renewable energy sources.

3. Colleges and universities have a four-decade proven track record in deploying, managing, operating, and continually upgrading advanced networks.

- With seed money from NSF in the 80s, CSNET and NSFNET provided a critically important stimulus to the early growth of the Internet by bringing academic researchers and students online across the United States, at first in their labs, then in their dorm rooms. We can do exactly the same thing today—to scale, in terms of network speed and reach.

- The academic community has experience in deploying and managing broadband networks on campuses; advanced optical networks through state-based and regional consortia; and high performance optical nationwide backbone capabilities.

4. Colleges and universities serve as neutral territory for open, non-proprietary, unclassified research, fostering partnerships with industry and government.

5. Colleges and universities are catalysts for local, regional, and national economic growth. They are the hubs for local communities: culture, information, training, medical care, employment, and social interaction. This is especially true for rural and underserved areas.

Investing in advanced broadband technology and research-enabled networks at colleges and universities and the networks that connect them is cost-efficient. If the government is to invest in broadband, it should invest some amount in long-term technologies that will last for decades, rather than in only short-term technologies that will be obsolete in 3-5 years. [This long-term investment will be a short-term accelerant.]

The supporters of this vision include: National Lambda Rail, Internet 2, Educause, StateNets, The Quilt, EPSCoR/IDeA Foundation, Western Interstate Commission for Higher Education, Southeastern Universities Research Association, and the Computing Research Association. Collectively, these organizations represent all 50 states, over 2200 colleges and universities, 30 state and regional networks, 44 corporations, and international reach to networks in 90 countries. State and regional networks connect over 55,000 institutions including K-12 schools, community colleges, libraries, medical research centers, museums, and performing arts centers.

Broadband investments should be a strategic down payment on our future. Colleges and universities are our future—in innovations to come by new generations of innovators. Today's students are tomorrow's workforce and tomorrow's customers. The academic community has the knowledge, the experience, and the foundation network infrastructure in place to jump start a national broadband vision and strategy, leveraging Federal ARRA investments in ways that will spread broadband, create jobs, improve health, push the frontiers of science, and educate young people.