

IEEE-USA white paper: US prosperity at risk; gigabit networks should be national priority

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The United States should deploy widespread wired and wireless gigabit networks as a national priority, according to a white paper from the IEEE-USA Committee on Communications and Information Policy (CCIP).

"Providing Ubiquitous Gigabit Networks in the United States," issued 14 March, says that our nation must act promptly to ensure that a new generation of broadband networks – of gigabit per second speed – is ubiquitous and available to all. Failure to act will "relegate the U.S. telecommunications infrastructure to an inferior competitive position" and undermine the future of the U.S. economy.

"Priority deployment of gigabit networks is essential for the United States to maintain its world leadership in the knowledge economy," IEEE Life Fellow and IEEE-USA CCIP member Dr. John Richardson said. "Information drives our lives and our prosperity. The problem is that current networks aren't fast enough to distribute that information properly."

Digital data rates, or speeds, are typically expressed as megabits per second (Mb/s) or gigabits per second (Gb/s). A megabit is one million bits; a gigabit is one billion bits. Current broadband networks, such as DSL or cable modems, have an asymmetric speed of about 2 Mb/s. Gigabit networks are capable of digital rates 50 to 5,000 times as fast,

with equal upstream and downstream speed. Symmetric speed means information can be downloaded and uploaded at the same rate. With asymmetric systems, upstream speeds lag behind downstream delivery rates.

Omnipresent U.S. gigabit networks, readily achievable by deploying optical fiber and high-speed wireless, would carry numerous benefits. These include providing the U.S. economy with superior ability to compete globally; stimulating economic activity in digital home entertainment; enhancing online education and training; and facilitating health care remote diagnosis and consultation (telemedicine).

Congress, the Executive Branch and private-sector initiatives could secure these benefits for our nation's global competitiveness and quality of life by adopting "principles leading to ubiquitous, symmetric gigabit availability as a national priority," according to the CCIP white paper (www.ieeeusa.org/volunteers/com.../docs/Gigabit-WP.pdf). Such principles include regulatory flexibility and encouragement of user-owned networks.

"The key fact of modern telecommunications is the convergence of voice, data, image and video into digital bit streams," said Richardson, a former chief scientist at the National Telecommunications and Information Administration. "We need faster networks to carry these bit streams to users. Broadband speed and penetration in the United States are pitiful compared to levels in Japan and South Korea. This means that U.S. prosperity is at risk because it depends, in large part, on fast and easy exchange of information."

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