Digital Opportunity for Youth Issue Brief
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The Children's Partnership

Helping Our Children Succeed:

What's Broadband Got To Do With It?

Broadband, or high-speed Internet, is "a technology that, in terms of powering economies, could be the 21st century equivalent of electricity."[1]

Broadband is changing the way children learn, communicate, play and prepare for their future. As a child grows up, critically important information about health care, scholarships, colleges, jobs, and community life such as driver's licenses or registering to vote is increasingly on the Internet, and sometimes only on the Internet.

As the significance of Internet access grows, a fierce debate is raging in communities, states, and at the federal level about who will deliver such services, how they will be delivered, and who will have access to them. Questions about who will pay and how much it will cost and who has ultimate control of this resource are also in play. As policymakers, community leaders, and business leaders are making major decisions, very few, if any, are asking how these decisions will impact the nation's children.

The Children's Partnership has researched and published this Issue Brief to inform leaders what is at stake in the broadband debate for the nation's 73 million children and youth and to provide concrete recommendations for ensuring that digital services and opportunities* are available to all children.

* *Digital opportunities are defined as the benefits derived from the use of any Information and Communications Technology (ICT)—such as but not limited to, the Internet, computers, hardware, applications, advanced media technology, hand-held devices, and other instruments for hearing or vision impairments, etc.—to improve or enhance children's lives in the areas of health, economic opportunities, educational achievement, and civic participation.*

How Do Youth Use Broadband?**

PAULA—a high school senior talented in the sciences attends an underperforming school that does not offer Advanced Placement biology. Paula takes the course online at a local community technology center with broadband access, which allows her to view essential course materials and to send her tests electronically. Paula passes the course, receives college credits, and demonstrates her academic excellence for a much-needed college scholarship.

ERIC—a 17-year-old who dropped out of high school is mandated by juvenile court to attend a local workforce-training program that has a computer lab with broadband access and a well-trained staff. Eric becomes a skilled Web site designer and lands a well-paying job at a local business, which relocated to the area because of its local broadband network. Eric now sees a career path in his future.

TEENA—a 10-year-old girl with diabetes in a rural county in northern California lives three hours from the nearest pediatric specialist that can treat her condition. Yet Teena is able to be seen by a pediatric endocrinologist and receive proper treatment locally because her primary care provider consults with and is supervised by a specialist hundreds of miles away at a university hospital through videoconferencing. Teena gets the care she needs using telemedicine without having to travel hours to her appointments. Her mother misses fewer days of work, and Teena and her mother can comply with the treatment plan laid out by her doctors.

** *These are not actual case examples, but composites of real stories shared with The Children's Partnership.*

What Is Broadband?

Broadband refers to high-speed, always-on connection to the Internet, which enables information to be transferred with very little delay in receiving or sending.[2] Broadband's immense capacity brings benefits and opportunities to those who have access to it. Broadband allows the quick transfer of large and complex sets of data, such as audio or graphic-rich material on Web sites, video, telephone service, x-rays, medical records, government forms, and more. This capacity, while seemingly technical in nature, can have a significant impact on the lives of children.

> "Broadband is not only about speed. Rather it is an enabling tool that powers applications and can change people's lives."[3]

How Is Broadband Changing Our World?

"Knowledge is now the principal source of wealth creation and new jobs in the United States. Ensuring that the United States and its populace keep up with the fast pace of knowledge dissemination and continuously evolving technology is crucial to maintaining a vibrant economy as well as remaining secure at home."[4]

As more and more businesses, government programs, higher education institutions, and the medical field take advantage of technological advancements, youth who do not have access to high-speed Internet and the skills to use it effectively will be isolated from information, services, products, and means of entrepreneurship—they will be unprepared for the demands of our technologically advanced world. This not only disadvantages our young people, but also our entire nation in terms of workforce competitiveness in the global economy. Since the year 2000, the United States has slipped 12 places in international rankings for broadband penetration, now lagging behind countries such as Japan, Belgium, and South Korea.[6]

> "In the near future, telephone, television, radio, and the Web all will be delivered to your home via a single broadband connection."[5]

U.S. Lags Behind in World Ranking

- In the year 2000, the U.S. ranked 4th in broadband penetration. Today, the U.S. ranks 16th in broadband penetration per capita.[7]
- The Japanese "have access to 'high-speed' broadband, with an average connection speed 16 times faster than in the United States—for only $22 a month."[8]

Why Does Broadband Matter for Children?

The Children's Partnership (TCP) examined current research regarding children and Information and Communications Technology (ICT), including high-speed Internet. The findings in the report, *Measuring Digital Opportunity for America's Children* (DOMS), highlight the ability of properly applied ICT to improve children's lives in four specific areas: academic achievement, preparation for the workforce, health care, and civic participation. Broadband plays a significant role in those areas, serving as the infrastructure or conduit for many critical services to youth. Here are a few examples of how broadband contributes to the healthy development of children and youth.

EDUCATION—Many online academic enrichment services use video, animation, sound, and interaction to help children learn, to excite them about a topic, and to reinforce concepts learned in class. Broadband is increasingly necessary to view multimedia Web sites. Some services even offer real-time tutoring by connecting students to a live tutor through a video and audio feed. Early research also indicates that such technology can have a strong impact on improving academic performance, particularly among children with lower grades.[9]

Educational Benefits of Broadband

In 1998, Boston Public Schools put high-speed technology networks in their schools and libraries and partnered with the Boston Digital Bridge Foundation to provide students technology access, training, content, and curriculum. The program evaluation showed:

- 95% of participants made significant improvements in their computer skills; and
- 80% of graduates went on to college versus the district average of 65%.[10]

ECONOMIC OPPORTUNITY—Possessing ICT skills makes students more attractive to potential employers and can give students skills needed for most professions. In addition, access to broadband means youth—particularly in rural or inner-city communities where viable employment opportunities are limited—have the option to obtain internships or employment in their desired profession without leaving their community. Broadband multiplies the employment opportunities available in these communities by allowing residents to apply for jobs in which they telecommute and relieving the "brain drain" many small communities experience. Broadband can also stimulate job growth and the local economy by attracting more businesses to the area.

> "…[P]otential businesses looking to relocate ask all the time: 'Have you got broadband, can you get me a fast connection to the Internet?'"[11]

HEALTH CARE—TCP found that using ICT can improve children's health and their access to health care by improving the quality of care, helping children and parents manage chronic conditions more effectively from home (producing cost savings), allowing access to vital health information, and helping young people enroll in health programs electronically and stay up to date on their immunizations.[12]

One experiment showed that youth using an Internet-based monitoring system from home were able to manage their asthma attacks (a frequent cause of school absenteeism), reducing limitations in activity by 48% compared to a control group of children using written diaries.[13] Children, their parents, and their primary care providers in rural or isolated areas can also gain access to medical specialists without having to travel hundreds—or even thousands—of miles, by utilizing telemedicine services such as videoconferencing that allow for real-time interaction, diagnosis, and consultation. Similarly, Internet-based electronic applications for children entering publicly funded health insurance programs are showing real promise as a way to speed up the application process for parents and allow states to determine eligibility more efficiently and economically. These are just some of the ways broadband can be used to improve overall health and health access for children.

Youth Use Net for Health Information

- Almost 20% of all young adults ages 18–25 use the Internet to search for health information, including sensitive health subjects like birth control, pregnancy, and AIDS.
- 39% of online "health information seekers" ages 15–24 changed their personal behavior because of health information obtained online.[14]

CIVIC PARTICIPATION—The Internet can play a key role in connecting children to others, by providing them with ways to express themselves or find others who share similar interests. Youth can also interact with their government or elected officials through real-time discussions or by watching streaming video of government in action. Students can also learn about the legislative and electoral processes by participating in online simulations and can use the Internet to organize around issues affecting their local communities. However, parents, teachers, and mentors need technology training so they can guide children and adolescents in using the Internet safely.[15]

These examples demonstrate the tremendous potential broadband holds for improving our children's lives. So, what are the challenges?

Do All Children Have Access to Digital Opportunities?

TCP's research documents a serious gap: many children are missing out on digital opportunities, and those most affected are living in rural and low-income areas. These children are most at risk as our country's workforce competitiveness continues to decline in the international arena. Although broadband can deliver key services and opportunities to our children, many children go without access to this crucial infrastructure. In 2003, only 26% of children ages 7-17 had access to broadband in their homes, and low-income children were one-seventh as likely to have broadband at home compared to children in higher income households. Before we can move forward with all of the applications that broadband can enable for children, we must ensure that broadband infrastructure reaches all children in every neighborhood.

The Digital Opportunity Gap Facing U.S. Children

Compared to their peers in households with annual incomes over $75,000, children in households with annual incomes less than $15,000 are:

- 1/2 as likely to have a computer at home;
- 1/3 as likely to have the Internet at home; and
- 1/7 as likely to have broadband at home.[16]

How Does One Get Broadband?

There are several ways broadband can be delivered. Nearly all broadband users (97%) receive service through telephone or cable television companies.[17] Phone companies offer Digital Subscriber Lines (DSL), which enable high-speed Internet connection through telephone lines without tying up a regular phone line. Cable companies allow high-speed access through their cable TV wires. Broadband can also be delivered over Power Lines (BPL), which could serve a much larger number of people, but this method is still being tested. People can also get high-speed Internet access through wireless technology ("wi-fi"), which uses radio airwaves. Still, most wireless methods require a wired connection to a nearby router (which connects to DSL or cable modem) that transmits the signal to the user's computer. Broadband deployment is an increasingly important part of our infrastructure in the United States, yet there is currently public debate over how—and even if—broadband will be delivered to all communities at an affordable rate.

Why Does Broadband Matter Now?

The public benefits of broadband access are becoming clearer at the same time that its potential for vast commercial profits has emerged. As the nation builds this next-generation infrastructure, decisions made during the next few months and years will determine who will benefit and how for years to come.

As demand grows, the debate about paying for and controlling these technologies is intensifying. Broadband providers, local communities, technology policy experts, and policy-makers are vigorously debating what roles the public and private sectors should and will have in determining the future of broadband as well as how it will be paid for and regulated.

The current debate has centered on how to modernize regulations. In the past, telephone and cable companies provided different services and were governed by different laws and regulations. The emergence of broadband has changed the playing field with both cable and phone companies able to offer voice, video, and data services.[18] Consequently, these two massive industries are now competing to provide comparable services, but current regulations still treat them differently.

Although telephone companies were only mandated to support universal service programs since the 1996 Telecommunications Act,[19] the concept of universal service has long been a part of telecommunications history since the first Communications Act of 1934.[20] These programs ensure that all families and rural communities have affordable telephone service based on the principle that such services are "essential to education, public health, or public safety…and are consistent with the public interest, convenience, and necessity."[21] This regulation does not apply to phone service provided by cable companies or to telephone service provided over the Internet (Voice over Internet Protocol).

On the other hand, cable companies currently build out cable wires to serve all areas and pay the local entity where

they operate a franchise fee. This fee flows into the city's general fund and supports vital city public functions, such as public safety and children's services.

These well-established policy approaches have served to create wider access to services and other public benefits that are particularly important for children and families who are low-income and vulnerable to being left behind.

> As the nation builds this next-generation infrastructure, decisions made during the next few months and years will determine who will benefit and how for years to come.

Both industries are now arguing that the requirements they must meet put them at a competitive disadvantage, and, hence, both are seeking exemption from certain regulations, including those that ensure service to rural and other underserved communities.

If they succeed in easing these requirements without replacing them, significant public detriment is possible. Low-income, rural, and other underserved communities could be cut off from this next generation of public infrastructure, and vital revenues needed to provide public safety or educational programs could be lost.

In response to the current shortage of affordable broadband in many neighborhoods and rural areas, some communities have begun to develop their own networks using wireless technologies. These municipalities understand the economic, educational and community-building benefits of broadband and are determined to be a part of the digital economy and society.

However, in many places industry has worked to block the ability of communities and cities to create their own broadband infrastructure on the grounds that this would lead to unfair competition. Prompted by commercial interests, fifteen states have passed laws restricting or disallowing municipal networks, leaving some communities vulnerable to lack of essential and affordable services.[22]

Political jockeying over such issues as how crucial infrastructure is developed is not a new phenomenon in the United States. In the case of building out electrical and telephone networks in the past, decisions were made that served both the public interest as well as the interests of commerce and national competitiveness. Those decisions were based on the premise that that all people in the country must have access to vital national networks. Policies followed to support the universal reach of such infrastructure and to ensure that those networks were also affordable to all.

The results of these past decisions have made clear that overall economic and social benefits from universal and affordable service demonstrably outweighed the initial investment needed to build out an inclusive network. In each case, the joint public-private investment in universal infrastructure has proven essential for the public good as well as lucrative for business interests. These historic successes reinforce the value of providing universal access for all people in the country to essential networks.

While there are important and different roles for public and private sectors in building out the 21st Century broadband infrastructure, policy goals and decisions should build upon the nation's long and highly successful tradition of commitment to universal service as a social, civic, and commercial benefit.

As the lives of young people increasingly rely on information and communications technologies for education, health and medical care, civic engagement and workforce preparedness, the principle of universal access to broadband becomes one of central concern to the nation's children, youth, and families.

An Investment in Our Children's and Our Nation's Future

We stand at an historic moment when the opportunity to build a new digital high-speed infrastructure can advance the dual goals of enriching and expanding opportunities for each and every child, while contributing to the nation's capacity to compete effectively in a global economy. Working together, policy-makers, telecommunication companies and community leaders can get the job done right for generations of children and families to come.

Recommendations and Resources

A Policy Agenda to Promote Digital Opportunities For Youth

1. Create Affordable Broadband Everywhere

Update current universal access principles (like those for telephone and cable) to include broadband; provide incentives for broadband developers to build in underserved communities; and permit municipalities to develop their own broadband networks where affordable services are not available.

2. Secure Stable Funding Streams that Support Broadband Use

Establish a "community technology program" in state policy so these entities can qualify for public dollars (e.g. workforce, after-school, health and other sustainable funding streams); direct more federal Workforce Investment Act dollars towards programs that emphasize basic and advanced technology skills training; and ensure that teachers, after-school program staff, and community technology programs that serve children get the resources and training they need to guide our youth in using broadband in ways that will improve their lives.

3. Deploy Broadband to Expand and More Efficiently Deliver Services to Children

Incorporate ICT literacy into K-12 education standards; work with children's health insurance programs in your state to pay for telemedicine services; and use electronic applications to streamline enrollment in health insurance and other programs for children.

Getting Started in Your Advocacy

1. Learn More by Using these Resources

- Visit local technology and after-school programs to see what's happening in your area; use this member directory by state of community technology centers: http://ctcnet.org/who/member_directory/index.htm
- Subscribe to The Children's Partnership's Newsblast RSS feed to get weekly news about programs that are working in local communities or search news archives for examples of programs: http://www.contentbank.org
- Read about current technology policies and how they affect youth across the country and in your state: http://www.techpolicybank.org

2. Get Involved

- Support or join local or state efforts to achieve universal broadband access – here's a link to a map of municipal broadband projects across the country (one example of the many universal broadband efforts): http://news.com.com/Municipal+broadband+and+wireless+projects+map/2009-1034_3-5690287.html
- Work with your state legislators to update your K-12 education standards to include technology literacy and to make sure teachers and schools have the resources to ensure those standards are achieved.
- See what's happening with digital opportunity issues such as universal/affordable access to broadband, e-enrollment in child health programs, telemedicine, technology training in Workforce Investment Act programs, and how these initiatives can be incorporated into your children's advocacy work.

3. Join with Others

- Look for opportunities to form public/private partnerships to ensure children have access to the tools needed to take advantage of broadband (computers, software and trained staff).
- Contact us at The Children's Partnership so we can work with you to build digital opportunities into your children's agenda.

Program Examples

K–12 technology literacy standards—North Carolina
http://www.techpolicybank.org/TPB/PolicyModels/NCTechSkills

Universal broadband efforts—Philadelphia Wireless Project
http://www.hearusnow.org/internet/10/philly/

After-school programs—Harvard Family Research Project
http://www.gse.harvard.edu/hfrp/projects/afterschool/resources/snapshot7.html

Workforce readiness examples—Pathways to Our Future
http://www.techpolicybank.org/TPB/Report/Pathways

Technology, youth, and health—One-E-App
http://www.oneeapp.org/

Useful Web Resources

The Children's Partnership – TechPolicyBank
http://www.techpolicybank.org

Hear Us Now
http://www.hearusnow.org

Free Press
http://www.freepress.net/

New America Foundation – Wireless Future Program
http://www.newamerica.net/programs/wireless_Future

Community Technology Center's Network
http://www.ctcnet.org/resources/dir/

For more information about what you can do, contact The Children's Partnership at 310.260.1220 or go to http://www.techpolicybank.org.

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Endnotes

1 Robert McChesney and John Podesta, "Let There Be Wi-Fi," *The Washington Monthly*, Jan.-Feb. 2006, 1 March 2006 (http://www.washingtonmonthly.com/features/2006/0601.podesta.html).
2 The Federal Communications Commission has defined "high-speed" as services with more than 200 kilobits per second capability, but many argue that this speed is insufficient and significantly lower than in other countries.
3 Alliance for Public Technology, "Promises to Keep: Advanced Services, Enhanced Lives," A Broadband Forum Hosted by the Alliance for Public Technology (Washington, D.C.: Alliance for Public Technology, Feb. 2002), (http://www.apt.org/publications/reports-studies/forum_report.pdf).
4 Eamon A. Kelly, "The Digital Opportunity Investment Trust and America's Global Leadership," *Spectrum Series Working Paper #11*, New America Foundation, Feb. 2005 (http://www.digitalpromise.org/2-16_Presentations/DOIT-Kelley-Letterhead.pdf).
5 op. cit. (1).
6 International Telecommunications Union, "Economies by Broadband Penetration, 2004," 21 Feb. 2006 (http://www.itu.int/ITU-d/ict/statistics/at_glance/top20_broad_2004.html).
7 Ibid.
8 Thomas Bleha, "Down to the Wire," *Foreign Affairs*, May/June 2005 (http://www.foreignaffairs.org).
9 Dale Mann, et al., "West Virginia Story: Achievement Gains from a Statewide Comprehensive Instructional Technology Program," 1999, as cited by Wendy Lazarus and Andrew Wainer with Laurie Lipper, *Measuring Digital Opportunity for America's Children: Where We Stand and Where We Go From Here* (Santa Monica, CA: The Children's Partnership, June 2005).
10 Andrew Wainer with Wendy Lazarus, *Impacts of Technology on Outcomes for Youth: A 2005 Review* (Santa Monica, CA: The Children's Partnership, June 2005).
11 Joe Max William, veteran economic development adviser, "Broadband Means Jobs," *The Tennessean*, Aug. 2005.
12 Wendy Lazarus and Andrew Wainer with Laurie Lipper, *Measuring Digital Opportunity for America's Children: Where We Stand and Where We Go From Here* (Santa Monica, CA: The Children's Partnership, June 2005): 32 (http://www.contentbank.org/DOMS).
13 Sylvia Guendelman, et al., "Improving Asthma Outcomes and Self-management Behaviors of Inner-city Children," *Archives of Pediatric and Adolescent Medicine*, Vol. 156, No. 2 (Feb. 2002): 114–120 (http://archpedi.ama-assn.org/cgi/content/abstract/156/2/114).
14 op. cit. (12). 17.
15 The Children's Partnership, "A Parent's Guide to Online Kids 101," PowerPoint Presentation, Feb. 2006 (http://www.childrenspartnership.org/presentations/onlinekids).
16 op.cit. (12). 26. Data from U.S. Bureau of Census, Current Population Survey, Internet and Computer Use, Oct. 2003.
17 U.S. Federal Communications Commission, *High-Speed Services for Internet Access*, July 2005 (http://www.fcc.gov/wcb/iatd/comp.html). Data as of Dec. 31 2004.
18 Both industries are beginning to provide voice, video, and data services—commonly referred to as a "triple play package."
19 Federal Communications Commission. Communications Act of 1934, as amended by Telecommunications Act of 1996, Pub. L.A. No. 104-104, 110 Stat. 56 (1996). 12 Feb. 2007 (http://www.fcc.gov/Reports/1934new.pdf).
20 Section 151 of the Communications Act of 1934, 47 U.S.C. § 151.
21 op. cit. (19) 47 U.S.C. § 254.
22 Free Press. Community Internet: Broadband as a Public Service. State Legislation, 12 Feb. 2007 (http://www.freepress.net/communityinternet/=states).

Other Resources on Youth and Technology From The Children's Partnership

Digital Opportunities Research and Resources:

- "A Digital Opportunity Action Plan - California Competes: Deploying Technology to Help California Youth Compete in a 21st-Century World," (May 2006)
- "Digital Opportunity for America's Youth: State Fact Sheets," (September 2005)
- *Measuring Digital Opportunity for America's Children: Where We Stand and Where We Go From Here* (June 2005)
- *Impacts of Technology on Outcomes for Youth:* A 2005 Review (June 2005)
- *Pathways to Our Future: A Multimedia Training Program for Youth that Works* (September 2002)
- *Computers in Our Future: What Works in Closing the Technology Gap? Lessons From a Four-Year Demonstration in 11 Low-Income California Communities* (June 2001)

Available at: http://www.techpolicybank.org

Content By and For Underserved Communities:

- *The Search for High-Quality Online Content for Low-Income and Underserved Communities: Evaluating and Producing What's Needed – An Issue Brief and Action Plan with Research Appendices* (October 2003)
- *Online Content for Low-Income and Underserved Americans: An Issue Brief* (June 2002)
- *Online Content for Low-Income and Underserved Americans, The Digital Divide's New Frontier: A Strategic Audit of Activities and Opportunities* (March 2000)

Available at: http://www.contentbank.org

Parents' Guides and Child Safety on the Internet:

- "A Parent's Guide to Online Kids: 101," Powerpoint Presentation (February 2006)
- *The Parents' Guide to the Information Superhighway: Rules and Tools for Families, Online 2nd Edition* (May 1998)

Available at: http://www.childrenspartnership.org

The Children's Partnership is a national non-profit organization that advocates for digital resources to benefit the nation's children and youth, particularly those who are low-income or lack opportunity to succeed. For more than a decade, The Partnership has undertaken original research to understand the impact of digital technology on children and has advocated for needed data, resources, and public policies to ensure that the digital economy and society includes opportunities for all of the nation's children. Please see www.childrenspartnership.org for more information.

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