

8-1-06  
Amy  
Please see me  
this  
Thanks Rob

252 Waterford Street, Edinboro, Pennsylvania 16412-2315

NORTHWEST TRI-COUNTY INTERMEDIATE UNIT

PHONE 814-734-5610

1-800-677-5610

FAX 814-734-5806

TTD 814-734-1098

<http://www.iu5.org>

July 28, 2006

Dr. Robert Towsey, Acting Superintendent  
Warren County School District  
185 Hospital Drive  
North Warren, PA 16365-4885

AUG 01 2006

Dear Dr. Towsey,

The summer is moving along quickly and as the start of another school year approaches, I need to update you on the progress of the e-Fund consortium. On July 13, 2006, Kevin Dellicker reviewed the responses to our Request for Information (RFI). I was pleased that the responses the consortium received indicated that we would be able to acquire high-speed broadband services to create the regional Wide Area Network (WAN) at an affordable price—approximately \$3,000.00 per month for a 100 megabit network connection, Internet2 transport, and Internet. The cost is before E-Rate or e-Fund dollars have been applied.

The intent of the consortium is to issue a Request for Proposals (RFP) on September 1, 2006. To release the RFP, the consortium needs to know which districts are committed to moving forward with the project to ensure that vendors are able to provide the optimum solutions and pricing. I have included a Letter of Commitment to participate in the Northwest Pennsylvania Regional WAN and the e-Fund grant. If you have any questions about the Letter of Commitment, please contact me immediately. Please return the Letter of Commitment to me by August 30, 2006.

I know there is a great deal of discussion you will need to have with your school boards as we move towards their formal approval this fall. I have included packets with information addressing some of the benefits of the WAN, the geographic area covered by the project, Internet2 information, and why broadband is important to children. Please feel free to share this information in a method most suitable for your district's needs.

Finally, there will be a meeting at the IU on August 15, 2006, from 1:00 p.m. until 3:00 p.m. regarding the content to be delivered over the regional network. I would ask that you have your Curriculum Director and Technology Coordinator attend this meeting as we refine our vision for the e-Fund grant application. Please notify Karen Sheldon at 734-8391 of who will attend from your district. If you have questions regarding the regional network, please contact me via e-mail at [vince\\_humes@iu5.org](mailto:vince_humes@iu5.org) or at 814-734-8390.

Sincerely,

Vince Humes, Director  
Technology Solutions and Services

## Letter of Commitment Northwest Pennsylvania Regional WAN

Warren County School District:

My district intends to purchase telecommunication services (network connectivity, Internet2 transport, and Internet) from the successful provider to the Northwest Pennsylvania Regional Wide Area Network (WAN) Consortium, to be selected by a Request for Proposals (RFP) process to be completed by December, 2006.

My district's commitment is contingent upon the RFP bids coming near the budgetary pricing options for comparable services offered by service providers in the Request for Information (RFI) of June, 2006, and my district's subsequent board approval by February, 2007.

I understand that my participation enables me to compete as a member of the Northwest Pennsylvania Regional WAN Consortium for a state e-Fund grant, pursuant to Act 183. I also understand that without my permission, I may not be eligible for any funds should the grant be approved.

1. My district intends to participate in the regional WAN. ☐ Yes ☐ No

2. My district's anticipated start date for network connectivity (select one):

☐ July 2007 ☐ July 2008 ☐ July 2009

3. If my anticipated start date is later than July, 2007 because of existing contracts, I will join earlier if my existing vendor wins the RFP and offers me the new terms, or if the winning service provider buys out my contract. If so, my anticipated start date will be (select one):

☐ July 2007 ☐ July 2008 ☐ July 2009

Dr. Robert Towsey

Acting Superintendent Name

Acting Superintendent Signature

Date



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July 28, 2006

Dear Education Leader,

Intermediate Units 4, 5, 6, and 28 have joined together to create the largest K-12 Wide Area Networking (WAN) consortium in Pennsylvania. There are approximately 100 school districts, Intermediate Units, technical schools, and other educational institutions that can take part in this exciting broadband initiative to bring high-speed networking services to the 12 counties in Northwestern Pennsylvania. Yet the most exciting aspect of this project is the benefits this network is capable of providing for everyone—students, parents, teachers, administrators, community members, and businesses!

Since early this spring, the Intermediate Units have been working with Dellicker Strategies to determine the feasibility of deploying a high-speed broadband regional education network through the issuing of a Request for Information (RFI). I am excited by the results of the RFI. Deploying a high-speed broadband network is feasible and the preliminary pricing is very attractive.

We can talk about megabits and gigabits and other network jargon, but the real issue is what will this network do for students, schools, and the community? The attached documents address some of the benefits of the network, show the geographic region of Pennsylvania to be covered, explains Internet 2, and gives a brief look at why broadband is important to and for children.

In Pennsylvania, we are fortunate to have several funding sources available to help address the costs of this network. The Intermediate Unit consortium will be applying for an e-Fund grant in October of 2006. The e-Fund has approximately 10 million dollars per year in funds available to be distributed through a competitive grant process. Additionally, we will take full advantage of the E-Rate program as well.

Please take a few minutes to review the attached documents regarding this exciting opportunity to provide enhanced networking capabilities to Northwestern Pennsylvania with an approximate starting date of July, 2007. If you have any questions, please contact me via e-mail at [vince\\_humes@iu5.org](mailto:vince_humes@iu5.org) or by telephone at 814-734-8390.

Sincerely,

A handwritten signature in cursive script that reads 'Vince Humes'.

Vince Humes, Director  
Technology Solutions and Services

# Regional Technology Network --Benefits

## Enhanced Learning Opportunities

**Access to Curriculum Management/Content** - The IUs, with the input of their member schools, can consolidate licenses for popular educational applications like *Compass Learning/Odyssey*, *Plato*, and an array of remedial tutoring or supplemental education programs.

**Video Streaming** - With a Wide Area Network (WAN), video from companies like Discovery/United Streaming or Safari can be purchased in bulk and stored at one place on the WAN. The storage location can be optimized for delivery to the district's point of access to the WAN.

**Internet2** - Internet2 provides high-quality, high-speed, instructional content exclusively to schools, universities, and research facilities around the world. Today, Internet2 enables Pennsylvania schools to provide content such as: music education from world-class musicians, foreign language instruction from native speakers, virtual field trips, etc.

**Video/Web Conferencing** - The WAN will provide the opportunity to deliver high quality video/web conferencing using standard Internet Protocols (IP). The WAN will offer sufficient bandwidth and the easy use of the Internet to practically eliminate the intermittent service of the past with high quality, real-time, two-way interaction. With the WAN providing any-to-any connectivity, video/web conferencing can occur between districts within the IU, between any consortium member district, and when combined with Internet2, between any other organizations worldwide that are connected to Internet2. The possibilities for student learning and professional development are virtually unlimited.

**Hybrid Courses** - Educational institutions around the country are discovering the enhanced opportunities and cost savings associated with hybrid courses; a combination of traditional face-to-face and on-line instruction. With course management tools like *Blackboard*, schools can develop or acquire course content, and then deliver these unique courses across their district or across the consortium.

**RCI** – The Regional Choice Initiative (RCI) has opened new doors to the educational opportunities available to students. With the implementation of the WAN, RCI will have new capabilities to extend its reach and offerings by utilizing hybrid courses, video/web conferencing, and Internet2.

**Professional Development** – Interactive, multimedia Act 48 eligible courses and programs, collegiate courses, and other training opportunities will be available directly from teachers' desks providing quality professional development while reducing travel cost, travel time, and lost instructional time.

**Emerging Technologies** – Many of the emerging technologies are based on rich multimedia which requires significant amounts of bandwidth to deliver. Video blogs, video iPodding, and live event streaming from schools, are just a few examples of tools available for districts to engage in with their communities.

Regional Technology Network --Benefits

### **Consolidation of Services**

**Voice over IP (VoIP)** - VoIP can eliminate long distance calling charges among school districts that participate in the WAN and drastically reduce voice charges overall. Schools can address the availability of VoIP services over the WAN as they develop their future telecommunication plans.

**Elimination of Redundant Lines for Video** - Schools that participate in the WAN can eliminate the need for separate ISDN or cable lines for video, resulting in immediate cost savings.

**Shared Software Services** - The WAN can help consolidate software applications that are common between districts. For example, districts could jointly purchase a substitute calling system, document management system, or data warehousing system, to reduce initial capital expenditures while maintaining individual needs and security.

**Student Information Systems** - Educational portals and student information systems are transforming the way students, teachers, and parents interact. The WAN and associated technologies can help create and implement these systems in schools across the region.

### **Enhanced School and Community**

**Emergency Services and Physical Security** - Districts can work with public safety agencies to provide enhanced security services for their districts. For example, districts could Web-enable their video surveillance cameras directly to a public safety agency.

**Economic Development Benefits** - When schools work together to buy large amounts of bandwidth, it requires new investments in the regional infrastructure by private telecommunications companies which drives down prices and makes new services available across the region. Ultimately, such “demand aggregation” creates new jobs and improves the quality of life in the region.

**Residential Broadband Services** - Pennsylvania’s new Act 183 law encourages schools to cooperate with community groups and telecom companies to provide broadband access in hard-to-serve areas.

## **Cost Saving to Taxpayers**

**Savings on Telecommunications Services** - Many districts will see an immediate savings on their telecommunication costs. As districts continue to acquire more bandwidth to deliver education to students, the savings the regional WAN will provide become significant because of the aggregate demand of the consortium and the consolidation of services. When compared with the cost of purchasing Internet and other telecommunication services today, the WAN will provide extremely competitive pricing over the life of the project.

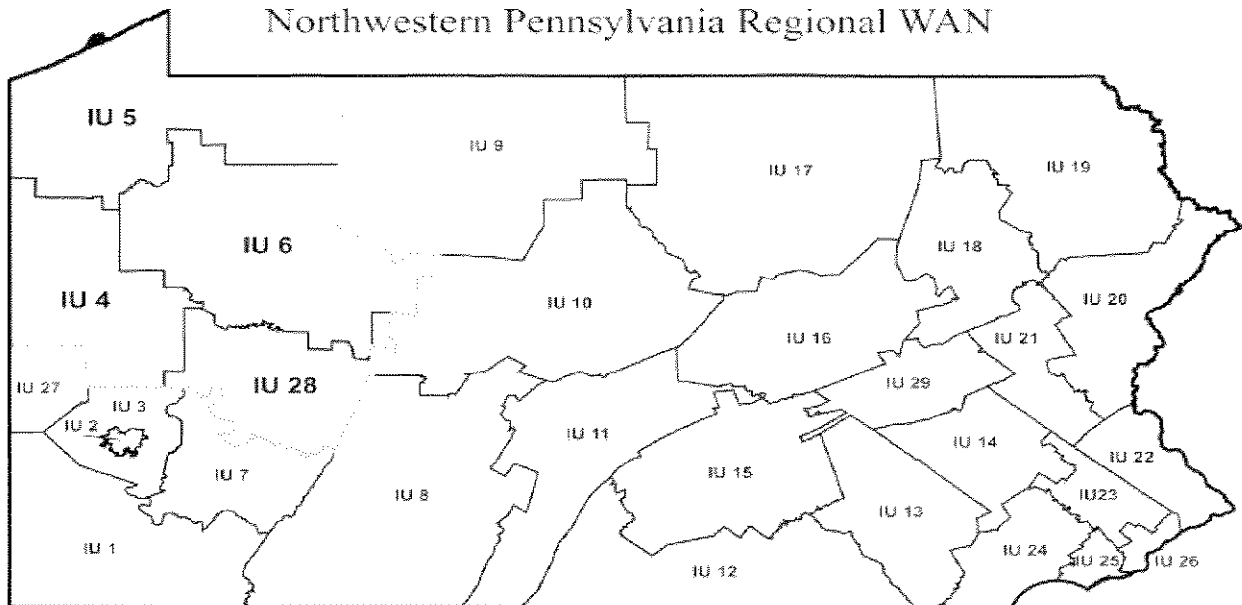
**Shared Software/Applications Licenses** - The services already mentioned represent only a fraction of the shared services that can be purchased jointly and delivered over the WAN. The IUs are currently creating processes to identify and purchase shared services.

**Shared Digital Instructional Materials** - One of the most powerful benefits of the WAN is the ability to store information at a central location and access it from any school on the network. With the WAN, digital instructional materials (videos, textbooks, reference materials, etc.) can be stored at any school on the WAN and shared, when appropriate, with any other school on the WAN, eliminating redundant resources.

**Hardware and Equipment** - The IUs' e-Fund grant application may help to defray equipment costs associated with using the WAN. In addition, schools will have new opportunities to bulk-purchase hardware and equipment.

# PA Intermediate Unit WANs

## Northwestern Pennsylvania Regional WAN



### Legend

- IU WAN Consortia - Northwestern Pennsylvania Region
- PA Intermediate Units

Source: Dellicker Strategies, LLC  
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www.internet2.edu

The National Internet2 K20 Initiative brings together Internet2 member institutions and innovators from primary and secondary schools, colleges and universities, libraries, and museums to extend new technologies, applications, middleware, and content to all educational sectors, as quickly and connectedly as possible. As of early 2005, there were 34 state K20 networks participating, enabling about 30,000 K20 institutions—including 23,388 K12 schools, 2360 public libraries, 594 community colleges, 852 four-year colleges and universities, and 74 museums, zoos, aquariums, and science centers—to connect to Internet2 advanced networks.



*Music Bridges: K-12 Faculty-Driven Music Programs*  
Manhattan School of Music  
St. Clair County Intermediate School District, MI

<http://www.msmnyc.edu/special/video>

Manhattan School of Music's distance learning program is partnering with Michigan's St. Clair County Regional Educational Service Agency to present



music programs delivered via interactive videoconferencing over Internet2 advanced networks. St. Clair County, which includes 57 schools across 7 school districts, will receive offerings such as American Composers, A Personal Introduction to Opera, and the type of custom telementoring sessions that require the high-fidelity, broadcast-quality streaming audio and video available over Internet2. By eliminating the barriers of time and distance, Manhattan School of Music's faculty and student teaching artists can extend their expertise to students and audiences around the country.

Experiences and Expertise

International Learning Communities

Rich Multi-Media Digital Libraries

Remote Instrumentation

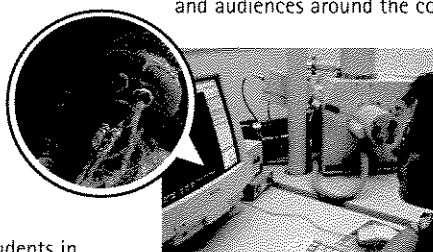
Creating New Knowledge

Creating New Opportunities

*Lewis and Clark Then and Now: Linking the Trail to America's Students*  
School District of Clayton, MO  
Apple Computer

<http://www.ali.apple.com/lewisandclark>

From 2003 to 2006, the United States will commemorate the bicentennial of the Corps of Discovery's historic journey across America. Throughout the 2003-2006 school years, Lewis and Clark Then and Now: Linking the Trail to America's Students will follow various re-enactment groups as they retrace the three-year voyage of the Corps of Discovery. Many aspects of Internet2 are involved—including the Internet2 Commons H.323 Videoconferencing Service, the National Internet2 K20 Initiative, and the ResearchChannel Working Group—enabling students in classrooms nationwide to retrace Lewis and Clark's journey and understand how it shaped America today.



*Imaginations Remote Instrumentation Project*  
Lehigh University

<http://www.lehigh.edu/~inimagin/>

The Imaginations project introduces K-12 students to electron microscopy and nanotechnology. The Center for Advanced Materials and Nanotechnology (CAMN) at Lehigh University uses Internet2 to offer K-12 students real-time remote access to the XL30 ESEM (environmental scanning electron microscope). Scale and surface area animations are available for the students' interaction, along with interactive image magnifications on the project website.

**MyK20**  
Community

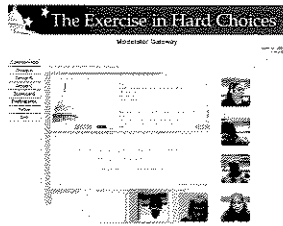


### The Exercise in Hard Choices

The University of Akron  
Beachwood City School District, OH  
Plain Local School District, OH  
St. Clair County RESA, MI

<http://www.crfb.org/html/exercise.htm>

For over 20 years, the Committee for a Responsible Federal Budget has administered *An Exercise in Hard Choices*<sup>SM</sup>, an interactive budget exercise, in a face-to-face, "traditional" format. The Exercise gives participants the



opportunity to role-play members of Congress as they debate spending and revenue options in small groups and arrive at a final federal budget for the year. The University of Akron has been engaged by the U.S. Department of

Education for three consecutive years to develop, test, and evaluate electronic versions of the Exercise, making use of the low latency and end-to-end performance capabilities of Internet2 to facilitate high quality video connections among distant participants.

### Megaconference Jr.

Chester County Intermediate Unit, PA  
MAGPI  
St. Clair County RESA, MI  
Several International Collaborators

<http://megaconferencejr.org>

Megaconference Jr. is the first student-led international videoconference learning event for K-20 schools. This all virtual H.323 videoconference brings together students and teachers



from around the world to showcase curricular project initiatives, increase cultural awareness and broaden understanding of the role advanced networks have in the 21st century world. In Megaconference Jr., students are involved in all aspects of the conference including planning, technical implementation and script writing.

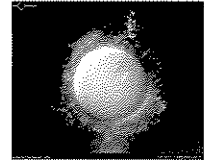
A primary goal of Megaconference Jr. is for schools to form sustained collaborative projects to extend the learning environment to the world outside the classroom.

### Microscope Imaging Station

Exploratorium

[http://www.exploratorium.edu/imaging\\_station](http://www.exploratorium.edu/imaging_station)

Located in San Francisco, the Exploratorium features hundreds of science, art, and human perception exhibits. The Exploratorium is a leader in the use of advanced networks to extend the outreach of museums as educational centers. The Exploratorium's Microscope Imaging Station gives museum visitors a unique opportunity to control research-grade microscopes and view stunning images of biological processes.



The web site provides a large and growing collection of interactive high-resolution images and DVD-quality videos. The Exploratorium is developing a virtual microscope and activities for classroom use.

### Immersion Institute

Mystic Aquarium  
Monterey Bay National Marine Sanctuary  
NOAA  
VBrick

<http://mysticaquarium.org/>

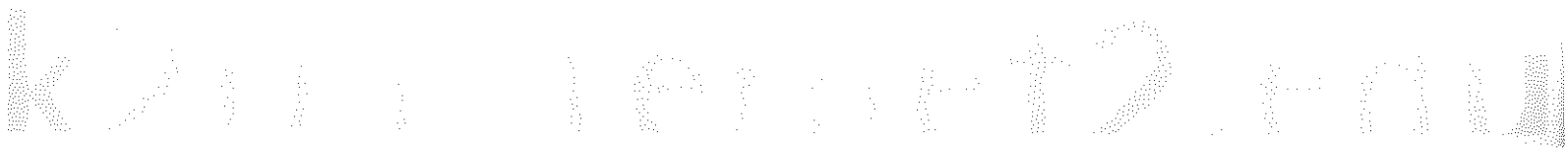
Visitors to Connecticut's Mystic Aquarium can immerse themselves in an underwater world 3,000 miles away by remotely controlling underwater cameras in California.

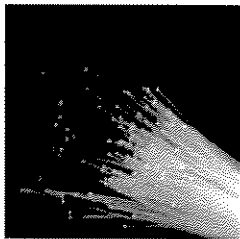


Using interactive consoles at the Mystic Aquarium's Immersion Institute, visitors control three video cameras on an underwater submersible in the Monterey Bay National Marine Sanctuary, the largest U.S. marine sanctuary. Using VBrick Systems MPEG-2 encoder/decoders, the live video is encoded into DVD-quality MPEG-2 and sent at an average rate of 6 Megabits per second (Mbps) to the University of California, Santa Cruz, where it travels across Internet2 high-performance networks to the University of Connecticut and on to the Mystic Aquarium.

## Getting Involved

The Internet2 K20 website has what you need to get engaged — project descriptions, people directories, collaboration tools, articles, news and events, and FAQs. <http://k20.internet2.edu>





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 21<sup>st</sup> century equivalent of electricity.”<sup>1</sup>

High-speed Internet is increasingly the infrastructure that delivers essential services to youth—services around education, health care, workforce preparation, and civic participation. More and more, broadband's reach determines children's access to information, availability of jobs in their towns, whether or not they will have the skills necessary for those jobs, and finally, their access to and quality of health care. Right now, policymakers, communities, and corporations are making major decisions regarding broadband: who will have control over it, who will have access to it, and how much it will cost. Very few of these players are asking how these decisions affect our children. So, while telecommunications companies spend tens of millions of dollars on lobbying to make their vision for broadband known in the policy arena, our children's futures hang in the balance. The Children's Partnership has prepared this Issue Brief to help leaders for children better understand what broadband is, what is at stake for our nation's 73 million children in the policy debate, and to offer concrete ways that leaders can make children's needs a priority and advocate for digital opportunities\* for all youth.

<sup>\*</sup> 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 leukemia in a rural county in northern California lives three hours from the nearest hospital. Yet Teena is able to get her chemotherapy locally because her primary care provider consults with and is supervised by a specialist 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.

<sup>\*\*</sup> 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.<sup>2</sup> Broadband's immense capacity brings benefits and opportunities to those who have access to it. Broadband allows the quick

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

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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.

## 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."*<sup>4</sup>

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

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

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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.<sup>6</sup>

## 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.<sup>7</sup>
- 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."<sup>8</sup>

## 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.<sup>9</sup>

## 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%.<sup>10</sup>

**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.

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“...[P]otential businesses looking to relocate ask all the time: ‘Have you got broadband, can you get me a fast connection to the Internet?’”<sup>11</sup>

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**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.<sup>12</sup>

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.<sup>13</sup> 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 videocon-

ferencing 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.<sup>14</sup>

**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.<sup>15</sup>

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.<sup>16</sup>

## 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.<sup>17</sup> Phone companies offer Digital Subscriber Lines (DSL), which enable high-speed Internet connection through telephone lines with-

out 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?

Now that industry, communities, and individuals recognize broadband's potential, the battle over who will control broadband is intensifying. Decisions made over the next couple of years will determine who will have access to broadband and how affordable it will be for many years to come.

Broadband providers, local communities, technology experts, and policy-makers are vigorously debating the roles that 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. Telecommunications companies understand the value of broadband as infrastructure and its critical role in people's daily lives: they spend tens of millions of dollars annually on lobbying to influence the policy decisions.

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Decisions made over the next couple of years will determine who will have access to broadband and how affordable it will be for many years to come.

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The current debate has centered on how to "modernize" regulations. In the past, telephone and cable companies provided different services and were therefore governed by different laws and regulations; the emergence of broadband has enabled both industries to provide voice, video, and data services.<sup>18</sup> Consequently, the two industries now provide comparable services while current regulations still treat them differently. Both entities argue that the requirements they must meet give their rival a competitive advantage, so each seeks exemption from certain regulations—including the requirement to provide service to rural and underserved communities.

More specifically, telephone companies are required to support universal service programs that ensure low-income

families and rural communities have *affordable* telephone service; this requirement does not apply to cable companies or to telephone services provided over the Internet (Voice over Internet Protocol). In providing video services, cable companies currently build out their cable wires to serve all

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Telecom firms spent \$56.8 million on political contributions in the last six years and at least \$77.8 million on lobbying in the last two years.<sup>19</sup>

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areas and pay the city a franchise fee, which flows into the city's general fund, supporting vital city functions such as public safety and children's services. If the two industries succeed in easing these requirements, two detrimental outcomes are possible: public benefits supported by the financial contribution to the general fund will be at serious risk; and underserved communities will see limited and, in many cases, unaffordable access to broadband service.

While broadband providers and elected officials debate these regulations, many neighborhoods, cities, and rural areas do not have access to broadband because the networks have yet to be built or because available services are too expensive. In response, some communities have decided to develop their own broadband networks using wireless technologies because of the opportunities for economic development, community building, and improved educational achievement it provides.

Recognizing the potential financial loss, the major phone and cable companies have joined forces to attempt to restrict communities and whole cities from creating their own municipal and community Internet infrastructure, on the grounds that these services would create unfair competition. Fourteen states have now passed laws restricting or disallowing municipal broadband networks.<sup>20</sup>

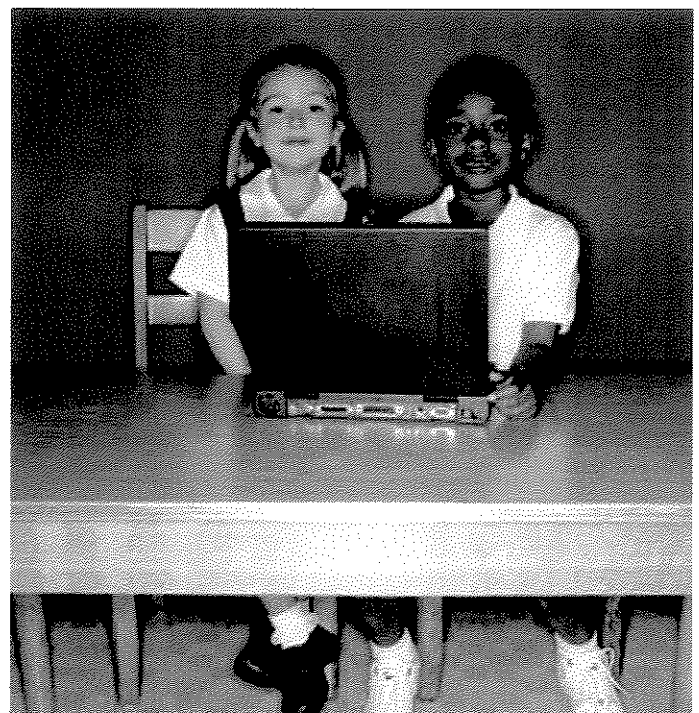
Political jockeying over crucial infrastructure is not a new phenomenon in the United States. In the case of electricity and telephone services, for example, decisions were ultimately made based on the belief that it was in the public interest—as well as in the interest of commerce and national competitiveness—that all people have access to these national networks. Policies followed ensuring that those networks were also affordable to all. The overall economic benefit from universal and affordable services outweighed the initial investment costs of building these networks. In each case, these joint investments in national infrastructure have proven extremely valuable for commerce and essential for communications and public engagement, and they reinforced the belief that every individual has a right to such critical services. The lessons learned from these successes and the commitment to universal service they reflect

should be applied as broadband infrastructure deployment is planned in the United States.

While there are important roles for the public and private sectors in broadband deployment, policy decisions need to build on and support our nation's long tradition of commitment to universal service: broadband infrastructure should be extended to all people in the United States, as well as to all key public institutions, including schools, libraries, hospitals, clinics, and other community-serving organizations—and it should be affordable to everyone.

### What Would it Mean for Our Children to Not Have Access to Broadband?

Without policies ensuring affordable universal access to broadband, many of our nation's children will be left behind in an increasingly technology-based world. They will have limited access to vital information, and they will not have the skills to use advanced technology that are increasingly important for education and job opportunities. If broadband infrastructure is not available and affordable to all children, families, and communities, the United States will continue to compromise our workforce competitiveness in the global economy. Just as was the case with universal electric service and telephone service, it is in our nation's best interest to develop universal broadband service. Children's advocates, elected officials, civic leaders, and rural advocates must step up to lead the effort to make broadband truly available and affordable everywhere so that all of our children can benefit from it. Now is the time to do that.



# Advocacy Toolbox

## 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](http://ctcnet.org/who/member_directory/index.htm)
- 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](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/NC\\_TechSkills](http://www.techpolicybank.org/TPB/PolicyModels/NC_TechSkills)

**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>

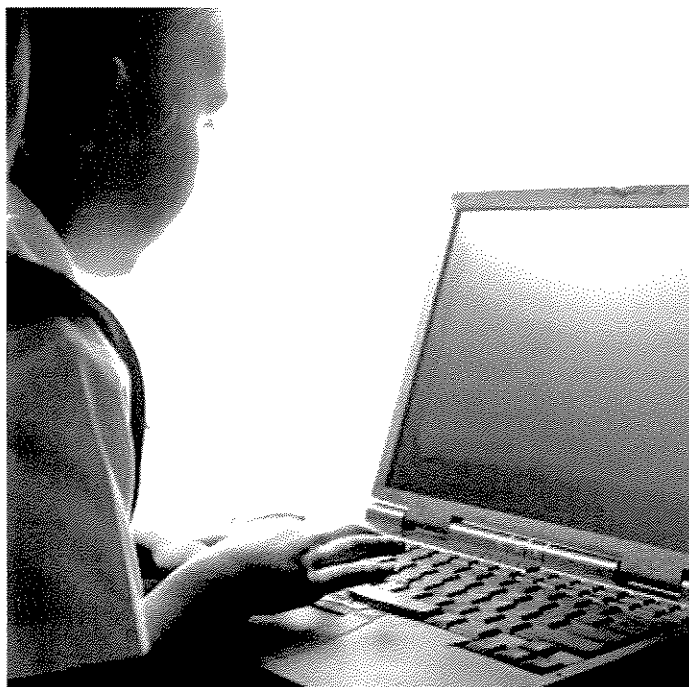
**New America Foundation – Wireless Future Program**  
[http://www.newamerica.net/index.cfm?pg=sec\\_home&secID=3](http://www.newamerica.net/index.cfm?pg=sec_home&secID=3)

**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>.

This issue brief was written by April KirkHart and James Lau with Wendy Lazarus and with contributions from Laurie Lipper. It was designed by Jessica Rothschild and Higher Visuals Design, Inc. The Children's Partnership thanks the California Wellness Foundation and the Community Technology Foundation of California for support of this work. TCP also acknowledges the contributions of the California Community Technology Policy Group, a coalition we participate in that advocates for many of the policy ideas found in this issue brief. Many of the policy ideas were formulated through our collective advocacy efforts and interactions with communities.



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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](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](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](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 Center for Public Integrity, "Well Connected," *Los Angeles Times*, 29 Sept. 2005.
- 20 Mitchell Szczepanczyk, "Community Internet Under Attack," *Z Magazine*, Vol. 18, No. 9 (Sept. 2005), 21 Feb. 2006 (<http://zmagazine.zmag.org/Images/szczepanczyk0905.html>).






## 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)
-  *America's Children and The Information Superhighway: A Briefing Book and National Action Agenda* (September 1994)

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



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