



2013 NTIA Broadband Adoption Toolkit

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CONNECTING AMERICA'S COMMUNITIES

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Download this publication from <http://www2.ntia.doc.gov/BTOP-Reports>

Disclaimer

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Foreword

This Broadband Adoption Toolkit draws on the experiences of the recipients of grants from the Broadband Technology Opportunities Program (BTOP). To date, the efforts of BTOP grant recipients have added hundreds of thousands of new broadband subscribers and, in the process, have yielded invaluable lessons on how to serve “hard-to-reach” Americans effectively. They have generated concrete, field-tested ideas for reaching individuals and communities that are not yet computer or broadband users, helping them become “digitally literate” and hopefully long-term subscribers to broadband service. It is the hope of the National Telecommunications and Information Administration (NTIA) that this Toolkit will help other agencies and organizations around the country to accelerate efforts to help the nearly one-third of Americans who are not broadband subscribers in their journey toward full inclusion in the online universe of education, employment, healthcare, and other vital activities.¹

NTIA, part of the U.S. Department of Commerce, is the Executive Branch agency principally responsible for advising the President on telecommunications and information policy issues. NTIA’s programs and policymaking focus on promoting broadband Internet access and adoption in America, expanding the use of spectrum, developing a robust, nationwide public safety communications system, and ensuring that the Internet remains an engine for continued innovation and economic growth. These goals are critical to ensuring America’s competitiveness in the 21st century global economy and to addressing many of the Nation’s most pressing needs, such as improving education, healthcare, and public safety.²

In 2009, Congress appropriated \$4.7B in the American Recovery and Reinvestment Act (Recovery Act) for NTIA to establish BTOP, one of the largest federal investments to date in the expansion of the Nation’s broadband infrastructure.³ BTOP’s purposes are to increase broadband access and adoption; provide broadband training and support to schools, libraries, healthcare providers, and other organizations; improve broadband access to public safety agencies; and stimulate broadband demand.⁴ BTOP is helping to close the digital divide across 50 states, the District of Columbia, and U.S. territories. Through more than 200 projects that are building broadband infrastructure, expanding public computer centers, and increasing adoption of broadband services, the program is paving the way for job creation and economic development—putting people to work, spurring private investment, and advancing the U.S. digital economy.

The initial portfolio of projects included:

- ✦ 123 Comprehensive Community Infrastructure projects, totaling \$3.5 billion in federal grant funds, to expand broadband access in unserved and underserved areas and to community anchor institutions such as schools, libraries, and hospitals;
- ✦ 66 Public Computer Center (PCC) projects, totaling \$201 million in federal grant funds, to provide access to broadband, computer equipment, computer training, job training, and educational resources to the public and vulnerable populations; and
- ✦ 44 Sustainable Broadband Adoption (SBA) projects, totaling nearly \$251 million in federal grant funds, to support innovative projects that promote broadband adoption, especially among vulnerable population groups where broadband technology traditionally has been underutilized.

Additionally, through the State Broadband Initiative (SBI), NTIA granted \$293 million to a designated recipient in each of the states, territories, and the District of Columbia. With this funding, states are collecting and validating data biannually on the availability, speed, type, and location of broadband services, as well as the broadband services used by community anchor institutions, such as schools, libraries, and hospitals. NTIA makes the data available in several formats and uses the data to update the publicly searchable, interactive National Broadband Map.⁵

1 National Telecommunications and Information Administration, “Exploring the Digital Nation — Computer and Internet Use at Home” (2011). Available at <http://www.ntia.doc.gov/report/2011/exploring-digital-nation-computer-and-internet-use-home>.

2 National Telecommunication and Information Administration, <http://www.ntia.doc.gov/about> (last visited April 25, 2013).

3 See Pub. L. No. 111-5, 123 Stat. 115, 128 (2009) (“Recovery Act”).

4 See id. § 6001(a)-(b).

5 National Broadband Map, <http://www.broadbandmap.gov/> (last visited April, 26, 2013).



Chapter 1 The State of Broadband Adoption

Like electricity in the 20th century and railways in the 19th century, ubiquitous broadband access has become a “must have” for economic growth, global competitiveness, and improved quality of life. In today’s increasingly online world, high-speed Internet access is a given for many Americans, who rely on broadband for work, play, education, and information.

Job searches, communication with family and friends, information-sharing, and civic engagement all depend on having access to broadband and basic digital skills. Unemployed Americans rely on Internet access to search and apply for jobs, and employees are often required to maintain basic computer and Internet skills to retain their positions or advance their careers. Youth also need broadband skills to take classes online, apply to college, and learn advanced digital skills, such as web or gaming design, to compete in the new digital economy. Businesses must have a web presence and many use e-commerce to connect with customers, suppliers, and to expand into new markets. Senior citizens use web-based applications, such as email, Facebook, and Skype, to keep in contact with families and friends or to look for health information. In addition, as government agencies and news outlets continue to expand their online presence, more citizens use web-based applications to communicate with government agencies, file taxes, apply for permits, track their children’s academic performance, and follow the news.

However, nearly one-third of Americans do not have broadband at home—that’s more than 100 million people without access to high-speed Internet. Whether they lack the skills or the income to become broadband users, these citizens are isolated from the digital mainstream.

Who is not online?

Several factors explain why some Americans do not subscribe to broadband at home. NTIA’s 2011 Digital Nation report revealed that income, education, race and ethnicity, and disability status can all affect whether an American is more or less likely to have high-speed Internet access at home.⁶

With the relatively high cost of broadband subscriptions compared to their incomes, it is not surprising that poorer Americans have lower rates of home broadband adoption than wealthier households. Only one-third of those with annual household incomes below \$15,000 have broadband at home, and approximately 43 percent of households with annual incomes between \$15,000 and \$25,000 have broadband at home.⁷

Americans with lower levels of education are also much less likely to have broadband at home. Approximately 30 percent of those who did not complete high school have broadband, and about half of those who only have a high school degree have broadband at home.⁸

Age can also be a distinguishing factor among non-adopters. Half of Americans 55 or older have broadband at home, but this figure drops off considerably among older Americans, with approximately 40 percent of those age 65 or over and just 21 percent of those age 75 or over having broadband Internet service.⁹

Race and ethnicity can lead to disparities in broadband use and home access, with fewer than 50 percent of blacks, American Indians or Alaska Natives, and Hispanics using broadband at home.

Additionally, Americans who have a disability, such as hearing loss, vision loss, memory or concentration issues, or mobility constraints, are less likely to have broadband. About one-third of Americans report at least one of these types of disabilities and only 38 percent of them have broadband at home.¹⁰

6 National Telecommunications and Information Administration, “Exploring the Digital Nation — Computer and Internet Use at Home” (2011). Available at <http://www.ntia.doc.gov/report/2011/exploring-digital-nation-computer-and-internet-use-home>.

7 Ibid.

8 Ibid.

9 Ibid.

10 Ibid.



HOW-TO: DEFINE DIGITAL LITERACY

“Digital literacy” is the ability to use information and communication technologies to find, evaluate, create, and communicate information; it requires both technical and cognitive skills.

Why aren't they online?

As the uses of the Internet continue to expand, being connected will become even more important to all Americans, regardless of income, education, age, race and ethnicity, and disability. It is important to remember that these factors are not the only ones that affect the decision to adopt broadband. Across these population segments, some are online and some are not, so questions remain: Why do only two-thirds of Americans subscribe to broadband at home? How do we reach that last third? What is keeping those Americans from becoming broadband adopters and using the Internet to improve their lives?

NTIA research has found that there are a number of barriers that keep individuals from adopting broadband. This Toolkit focuses on five primary barriers:

- ✦ **Access and Availability:** While not the most prevalent factor, lack of access and availability still remain a key barrier to adoption. Access is a barrier for households in areas where high-speed Internet is not available, especially in rural areas of the country. According to NTIA's 2011 Digital Nation report, 40 percent of rural Americans did not subscribe to broadband at home, with 9.4 percent (compared to 1 percent in urban areas) noting a lack of broadband availability as the primary barrier to adoption.¹¹
- ✦ **Cost:** Rural and urban populations alike cite the high cost of broadband subscriptions as a reason for non-adoption. Non-adopters also may have concerns about the confusing and unpredictable nature of broadband subscription costs, or find that the cost of purchasing and maintaining a computer is a barrier to connecting to broadband service.
- ✦ **Perception:** Many non-adopters have not experienced the benefits of being online and are apprehensive about the Internet. They perceive the Internet as unknown and dangerous, potentially compromising privacy, the safety of their children, and their financial security. They may not be aware of opportunities to learn how to protect themselves on the Internet or to be part of a social network that includes people with the expertise to help them.
- ✦ **Relevance:** Non-adopters often do not believe that broadband Internet is relevant to their lives. These Americans are used to performing tasks and accessing services without using the Internet, and they do not think that there is anything on the Internet that would improve or enhance their lives.
- ✦ **Skills:** Many non-adopters, especially older, less-educated, and lower-income Americans, do not have the digital literacy skills needed to use online tools and services effectively. They may own computers and/or have broadband available to them, but they are not comfortable, confident users.

These barriers are cross-cutting, and many individuals cite more than one barrier as a reason for non-adoption. For example, parents may have the skills and the resources to have broadband at home, but may worry that their children are not safe when online. Others may be more comfortable paying bills manually or in person and worry about whether their personal data will be protected if they manage finances online. Older individuals may be intimidated by technology and not realize that the Internet could provide a way to manage prescriptions or health information from their homes. An urban resident may have broadband available and a computer at home, but be unable to afford a monthly broadband subscription. Each of these concerns deters Americans from becoming adopters. The role of broadband adoption programs goes beyond simply stating the benefits of broadband or assuming that people will want to get online. Adoption programs need to meet people where they are, encourage them, and show them how they can safely use the Internet to improve their lives.

¹¹ Ibid.

What is this Toolkit?

Through BTOP, NTIA awarded nearly half a billion dollars in grants to improve public computer centers and increase broadband adoption. Each project was designed to meet local needs, engage specific audiences and demographic groups, and demonstrate the power of being connected. Understanding and documenting what is working has been a vital component of these pilot programs. BTOP funds have provided millions of training hours and supported communications and outreach campaigns nationwide. The projects also have unleashed a tremendous wave of innovation, such as new curricula for learning how to be “digitally literate” and applying those skills to find a job, start a business, or complete a degree. This Broadband Adoption Toolkit harvests the early results of this innovation so that the many organizations and government agencies that have a stake in America’s online future can use this information to reach, educate, and support people who are not yet online.

This Toolkit highlights adoption activities in four areas:

- ✦ **Awareness and outreach**
- ✦ **Home computers and broadband service**
- ✦ **Training planning and delivery**
- ✦ **Curriculum and relevant content**

Each activity is closely tuned to the needs of a specific group or community: low-income immigrants, parents of school-age children, seniors, and many others. The examples in each section are intended to spur ideas and highlight ways that a program can overcome local barriers to broadband adoption. Additionally, the section on “Starting a Broadband Adoption Program” contains information and tools to help plan and implement a new program.

As more services and information migrate to online-only formats, the human and social costs of not being online are amplified, reinforcing existing patterns of isolation and disadvantage. Institutions such as libraries, workforce centers, nonprofit organizations, and community colleges are establishing programs to help address this digital gap. Our hope is that the many other emerging initiatives to bring people online, including *Connect2Compete*, *Building Digital Communities*, state- or city-wide programs, and local initiatives, can use the ideas in this Toolkit to learn from what has worked, help jump-start programs, and benefit from the Nation’s investment in BTOP.



Chapter 2 Starting a Broadband Adoption Program: Begin with the End in Mind

Most new programs start with an idea about a community need that should be filled, or a new resource that could benefit a community's citizens. But putting ideas into practice can be challenging. This chapter introduces four steps that can help program organizers develop a strong broadband adoption program. It also provides resources for program planning, stakeholder engagement, and evaluation.

No two broadband adoption programs can be exactly the same because no two communities are the same. Each has its own characteristics, needs, opportunities, and challenges. However, like many other community development efforts, successful broadband adoption programs share a general development process:

1. **Needs assessment:** Form a clear understanding of the needs and opportunities in the community—and how broadband adoption can address them.
2. **Stakeholder engagement:** Identify and engage a wide range of stakeholders in the program.
3. **Program planning:** Develop an implementation plan that includes specific, measurable, achievable goals—and aims high.
4. **Continuous improvement:** Implement a continuous cycle of reflection, data collection, and program improvement.

"Begin with the end in mind" is one of the seven habits of highly effective people, from Stephen R. Covey's book of the same name.¹² The ultimate goal, or "end state," of a broadband adoption program is defined by the positive change it will make in the social, economic, or cultural life of the community it serves. Because broadband adoption is fundamental to success in many areas of modern life, the end state may be related to education, healthcare, employment, civic participation, or many other domains. Describing a clear end state at the outset of a new program can help ensure that activities generate the expected benefits.

Resources:

@ Institute of Museum and Library Services (IMLS) Building Digital Communities page: <https://www.ims.gov/sites/default/files/publications/documents/buildingdigitalcommunities.pdf>

Step 1: Understand Community Needs and Opportunities

All communities have both assets and needs. A successful program uses the community's assets effectively to meet its needs. Examples of a community's assets are its organizations, physical spaces, people, institutions, and culture. Community needs include economic sustainability, a clean environment, education, public safety, shelter, and healthcare. A broadband adoption program can leverage many different kinds of community assets and address a broad array of needs, but it must be guided by a clear and specific answer to the question, "What problem are we trying to solve?" The first step in this process is gathering information.

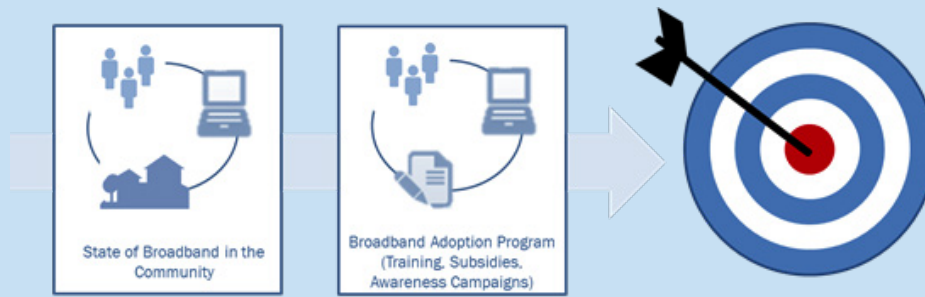
To assist in "mapping" or inventorying the community assets and assessing its needs, a program designer should:

- ★ **Gather general information about the community:** What is the demographic make-up of the community? What languages are spoken? What resources or assets are already in place?
- ★ **Identify existing community problems or needs:** These may be community-wide or related to a specific audience or neighborhood.

12 Stephen R. Covey, *The 7 Habits of Highly Effective People: Powerful Lessons in Personal Change* (New York: Free Press, 1989).



HOW-TO: FRAME PROGRAM DEVELOPMENT



It is daunting to think about developing a program from the ground up. To avoid getting overwhelmed or distracted by the many forms that a program could take, think about the program in three segments:

- ✦ **CURRENT STATE** — Determine the current state of broadband in the community.
Example: Broadband adoption is prevalent among youth and young adults, but less than 50 percent of adults over 45 are broadband users.
- ✦ **PLATFORM** — The platform is the big idea for the program. The tactics/tools to achieve the end state should support this big idea. *Example: The program will provide digital literacy sessions after work and at lunch to adults over 45.*
- ✦ **END STATE** — Identify the desired state of the community once the program is complete.
Example: In the community, more than 85 percent of adults over 45 adopt broadband.

- ✦ **Collect broadband adoption information about the community:** Who is online, and who isn't? How are community members accessing the Internet (e.g., home subscriptions, public computer centers, mobile devices)? What are popular online activities?
- ✦ **Identify existing broadband adoption and digital literacy programs:** What community institutions offer these programs? Do they target specific community members (e.g., youth, seniors, immigrants)? Is anyone else working on this issue?

Use the findings of the community assessment to focus program goals. For example, perhaps a larger community goal is to help seniors manage their health. The community has a substantial senior population, and many of them do not use the Internet. The community assessment may show that a local nonprofit provides computer training for the general public, but there is a lack of programming targeting seniors or providing information about online health resources.

Resources:

- @ The California Emerging Technology Fund (CETF) conducted a Community Assessment Survey of more than 1,000 community members in English and Spanish in 2009 to understand their access to broadband, perceived barriers, and needs. They published the methodology and findings, including the entire survey for others to use as a model. http://www.cetfund.org/progress/community_assessment_2009
- @ The C.K. Blandin Foundation promotes broadband adoption and deployment throughout rural Minnesota by encouraging community members, businesses, and policymakers to develop a shared vision for their broadband expansion plans, which includes digital inclusion programs. A key step is to develop a Community Technology Assessment, samples of which can be found here: <http://blandinfoundation.org/resources/case-studies/minnesota-intelligent-rural-communities>



HOW-TO: USE A LOGIC MODEL

It can be helpful to tie information together using a framework called a logic model. Its purpose is to clarify the underlying logical links between program activities and anticipated benefits to the community. Each program should have well defined inputs, activities, outputs, outcomes, and impacts — all with measurable benchmarks of success. Using the example of helping seniors manage their healthcare, the logic model would include:

- ✦ **INPUTS:** Resources the program needs, such as trainers, computers, digital literacy curriculum, and classroom space.
- ✦ **ACTIVITIES:** What the program will do, such as selecting digital literacy curriculum focused on Internet health resources, conducting outreach at senior centers, and conducting workshops for seniors.
- ✦ **OUTPUTS:** What the program will measure as indicators of progress, such as number of seniors served, number of workshops conducted, or number of seniors reached through outreach activities.
- ✦ **OUTCOMES:** Changes the program can observe and measure in the target audience, such as seniors can identify online health resources, seniors feel more confident to access those online health resources, seniors use the Internet to find health information and communicate with health providers.
- ✦ **IMPACTS:** Seniors can better manage their health, as evidenced by indicators such as fewer hospital visits, fewer falls, and improved management of chronic conditions.

For more information about logic modeling and how to use it, see the resource collection at the Institute for Museum and Library Services http://www.ims.gov/research/evaluation_resources.aspx.

Step 2: Identify and Engage Stakeholders

Identifying and getting to know relevant stakeholders is critical to the success of broadband adoption programs. Anyone can be a stakeholder. At this stage, it is critical to gather as much information as possible about the people and organizations that could be affected by or interested in the program and the problem it aims to solve. Three important stakeholder groups are program beneficiaries, potential partners, and community influencers.

- ✦ **Program Beneficiaries:** These are the individuals and organizations that could benefit from the program. For instance, seniors could improve their health, and local government could benefit from cost savings on healthcare.
 - ▶ What individuals or groups of individuals could benefit, and in what ways?
 - > What are their needs and goals?
 - > What are their attitudes toward using computers and the Internet?
 - > What skills do they have, and what skills do they need?
 - > What are their trusted information sources?
 - ▶ What organizations could benefit, and how?
 - > Local government
 - > Healthcare providers
 - > Social service providers
 - > Senior centers
 - > Businesses

- ✦ **Potential Partners:** These include non-profits, public institutions (e.g., schools and libraries), the business community, civic groups, and others who can contribute to the program.
 - ▶ How is the project aligned with their missions?
 - ▶ How can they participate (e.g., funding, contributions of facilities or staff time, publicity, etc.)?
 - ▶ Are there opportunities to combine resources?
 - ▶ How could they promote the program to their constituents?
 - ▶ How can their expertise help the program provide better quality services?
- ✦ **Community Influencers:** Local government, media groups, faith-based organizations, and other community leaders can provide insight into community needs and facilitate connections with community members.
 - ▶ How could these influencers be informed about the program?
 - ▶ What support can they provide to the program?

Information from stakeholders can help to describe community needs and preferences, and shape the direction of the program. For example, a needs assessment may find that seniors are a bit fearful of trying new technology, but they would like skills to better manage their health. It may also find that senior centers or senior living complexes would be willing to host training events for their constituents and would welcome involvement in the program.

Stakeholder input should be gathered throughout the life of the program, not just during the planning stage. Each step of the way, stakeholders should be asked for their feedback—making the wrong assumptions about what they want can hurt the success of the program. Listen and be ready to act on the feedback to improve the quality and the impact of the program.

Resources:

- @ NTIA produced a Stakeholder Outreach and Sustainability Toolkit for BTOP recipients which includes strategies for mapping a network of possible stakeholders and including them in program planning and implementation: http://www2.ntia.doc.gov/files/btop_toolkit_2_122110_final.pdf
- @ The University of Wisconsin-Extension's (UWEX) Center for Community Technology Solutions published a guide based on its experiences in five demonstration communities that brought public and private partners together to build "Community Area Networks" (CANs): <http://broadband.uwex.edu/resources/build-a-can/>
- @ UWEX also contributed to the development of the National e-Commerce Extension Initiative's "Connecting Communities" curriculum, which includes many useful tools for stakeholder engagement: <http://srdc.msstate.edu/ecommerce/curricula/connectingcommunities/>

Step 3: Create an Implementation Plan

The previous two steps focus on gathering information about community needs, assets, and stakeholders. Programs can use this information to formulate an opportunity statement, which identifies the target audience for the program, their needs, and the benefit or impact the program is trying to achieve. The opportunity statement should be specific and tailored to the community based on the research and analysis performed. Using a previous example, an opportunity statement could be: "Seniors need basic digital literacy skills so they can use the Internet to better manage their health."

Whoever the audience, BTOP recipients have repeatedly indicated that to engage people in their programs, they need to connect their activities to immediate personal goals or needs. Put simply, the message is not "learn to use a computer" but "learn how to connect to your doctor and get health information online." Individuals may want to earn a GED, find a better job, communicate with friends and family, or access news and entertainment. Digital literacy skills are a tool to accomplish those



HOW-TO: SELECT PROGRAM ELEMENTS

Implementation of successful broadband adoption programs incorporates several key elements, and deciding which ones to include depends on the goals of the program, barriers to adoption in the community, and the needs and preferences of the population that will be served. These key elements include:

- ✦ **AWARENESS & OUTREACH:** Conducting awareness and outreach activities is vital to successfully engaging stakeholders. Effectively communicate information about the program and use communications activities to meet the program's goals. Effective marketing and awareness campaigns tailor the messages, themes, and delivery channels to their target audience.
Visit page 15 for more resources and examples.
- ✦ **HOME COMPUTER & BROADBAND SERVICE:** The costs of computer ownership and home broadband service can be prohibitive for some community members. Successful broadband adoption projects use multiple strategies, such as discounts and incentives, to make owning a computer and using a broadband connection less expensive and less confusing.
Visit page 23 for more resources and examples.
- ✦ **TRAINING: PLANNING & DELIVERY:** The most successful broadband adoption programs provide some form of digital literacy training. Including training as a tactic is not required, but the majority of the barriers to adoption can be addressed through some sort of training. Training is most effective when it is tailored to address the specific needs of the target audience.
Visit page 31 for more resources and examples.
- ✦ **TRAINING: CURRICULUM & RELEVANT CONTENT:** Broadband adoption programs often involve selecting or developing some form of digital literacy curriculum. Depending on the target audience, the curricula could focus on basic skills (e.g., keyboarding or using a mouse) or more advanced skills (e.g., evaluating online information or creating digital media such as movies or music). Curricula and digital literacy tools should build skills that enable students to improve their lives.
Visit page 41 for more resources and examples.

The examples included in this Toolkit note the population and barrier(s) that the featured examples address. As program organizers develop an implementation plan, they can build on these examples to design program activities.

goals; they are not an end unto themselves. While developing and implementing the adoption program, keep in mind the needs of the individuals that the program is serving.

Once the opportunity is defined, a program can build out the goals and activities.

- ✦ **Set specific, measurable, achievable goals.** For example, "We will teach 100 seniors how to find health information on the Internet by the end of the year."
- ✦ **Identify the activities, or tactics, the program will use to achieve this goal.** Most BTOP recipients have used a combination of outreach and training activities. Some also provided computers or home broadband subscriptions, or have developed specialized training curricula for their target audience.
- ✦ **Consider the barriers to adoption faced by the target population.** Draw on the community assessment to make sure that the program responds to the needs of the target population, and take into consideration their ability to access the Internet, current attitudes about technology, skill levels, and the personal goals that technology can help them achieve.
- ✦ **Assess the resources needed to implement activities (staff, time, funding).** Select activities that will help make the greatest impact with the program's resources.

- ✦ **Consider partnerships or other relationships that could increase the resources available for the program.** Use the Stakeholder Outreach and Sustainability Toolkit (see page 10) to identify how to approach and engage with other community groups.
- ✦ **Determine how to collect information that will demonstrate the impact of the program.** This topic will be explored in greater depth below, but aim to build these information-gathering tasks into the implementation plans.
- ✦ **Create a plan.** This is where “the rubber meets the road” and staff begin to implement program activities. Identify steps to take, staff or volunteers to perform those steps, and timeframes for completing them.

Step 4: Continually Improve the Program

Program development does not end when the program is launched. It is natural for programs to evolve as community needs change, new opportunities arise, and lessons are learned about which activities or tactics are most effective. A key requirement for continuous improvement is evaluation—building in processes to collect information about successes and challenges, and planning time to reflect on how the program can improve.

- ✦ **Identify what information the program should collect to demonstrate impact.** Using the example of providing training to seniors, a program may want to collect information on outputs, outcomes, and impacts. (See the logic model sidebar on page 9 for examples.)
- ✦ **Consider how to collect this information.** BTOP recipients have used surveys, interviews, and focus groups, among other methods, to collect information.
- ✦ **Collect information from the target audience on how the program is benefiting their lives.** Stakeholders, partners, and other community leaders can also provide insight into changes they are observing that could be attributable to the program.
- ✦ **Identify specific times when the program will collect feedback.** For example, trainers may give training participants a short survey directly following a class, or the program may hold focus groups every six months.
- ✦ **Consider how to share the collected information with key stakeholders.** For example, a program may wish to approach local media to do a story on the program, give a presentation at a meeting of local government to build support for the work, or report on progress made to an entity that helps fund program activities. Build in a regular time to review what program organizers are learning with staff and stakeholders.
- ✦ **Adapt the program to increase impact.** Don’t consider the program a failure if an activity or tactic did not work as well as hoped. Speak with stakeholders, revisit the needs of the community, and try another approach that may resonate more with the target audience. Also keep in mind that change will not come instantly—give the program a chance to take root, and celebrate even small successes.

By using the four steps outlined in this chapter, program organizers will be on the path to developing a broadband adoption program that responds to community needs, and improves and adapts over time. With stakeholder support and demonstrated benefits, the program will be positioned to serve community members for years to come.

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“Life is *more efficient* online.”

I went to Smart Communities because I was thinking that I needed to learn how to use a computer. In these times it's something that's as essential as learning to read or write.



Smart Communities



“We understand the importance of working with government and the philanthropic community, but there is an equally important need to hear the voice of community leaders to ensure opportunities that are available meet real needs of the residents.”

— Dionne Baux,
Program Officer at LISC

Chapter 3 Awareness & Outreach

Nearly 47 percent of people who do not subscribe to broadband say that they do not need it—there is nothing of interest online for them, or the way they do things now is working fine.¹³ These individuals are not aware of the benefits of broadband access or do not understand how Internet use can improve their daily lives.

Communication is a key element in motivating individuals to adopt broadband. Sharing information about broadband can engage their curiosity and address their concerns. Awareness and outreach activities are designed to convey positive messages and realistic information about what people can do online, to share information about affordable Internet and computer options, and to promote the availability of training, public computer centers, and other services. Effective messages are those that are carefully tailored to the needs, interests, values, and concerns of the target audiences.

For the purposes of this Toolkit, “awareness” describes broad campaigns that reach many people within a target population through advertising, talk radio, public service announcements, and other media. Awareness campaign organizers often use research to craft and test their messages. Outreach efforts are more personal, involving face-to-face interaction at community events, in familiar institutions such as houses of worship, schools, or cultural centers, within families, or via other social networks. Community partnerships can often enable broadband organizations to reach into specific communities with greater credibility.

As program organizers plan awareness and outreach activities, they must think about the information that the program wants to convey, the goal of the activities, and, most importantly, the people that the program is trying to reach.

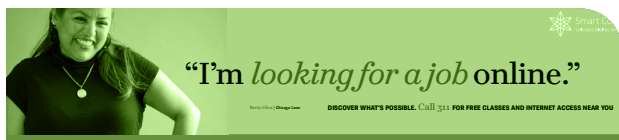
Resource:

@ A planning worksheet can be a useful tool when determining the type and frequency of awareness and outreach activities. A sample worksheet is included on page 58.

Awareness

The examples below demonstrate how organizations develop messages and use a range of media to communicate those messages to community members. The City of Chicago, CETF, and UWEX based their campaign messages on how individuals can improve their lives using broadband. They disseminated these messages using television, radio, print, and outdoor advertising. Mission Economic Development Agency (MEDA) used talk radio to raise awareness. The City of Philadelphia used the city’s informational phone service and web applications to promote computer access and training availability. Although each organization used different activities to increase awareness, all selected the medium based on the ability to access their targeted populations and the common barriers to adoption that they have faced.

13 National Telecommunications and Information Administration, “Exploring the Digital Nation — Computer and Internet Use at Home” (2011).



POPULATION Low-income urban residents

BARRIER Relevance

STRATEGY Develop print advertising that showcases personal stories from individuals in the target population

The *City of Chicago*, with the *Local Initiative Support Corporation* (LISC), a BTOP subrecipient, worked to increase broadband adoption in five low-income neighborhoods in Chicago. LISC and its tech organizers engaged a marketing firm to develop an awareness campaign that used personal stories to illustrate the advantages of broadband use. Each neighborhood included different demographic groups, from Hispanic immigrants in Pilsen to African Americans in Englewood. The goal of the campaign was to create a series of ads that could be tailored to each neighborhood's needs. The firm met with leaders of community agencies, listened to their ideas, and proposed designs that featured individuals from the targeted demographic groups sharing their broadband "success stories." This method tapped into relevant themes and also gathered real examples from the community. LISC placed ads on buses and rail, as well as on brochures and postcards for door-to-door outreach.

As a result of this awareness campaign, other outreach efforts, and training programs, the City observed increases in broadband adoption. A citywide study showed that more than 32,000 households obtained broadband subscriptions, and that residents in the five targeted low-income neighborhoods had increases in subscribership that were 15 percent higher than in similar neighborhoods.

RESOURCES

- @ LISC Platform for Participation and Innovation (includes information on the awareness campaign): <http://www.lisc-chicago.org/uploads/lisc-chicago/documents/scpmasterplan.pdf>
- @ Smart Communities ads: https://www.facebook.com/SmartCommunitiesChicago/photos_stream



POPULATION Non-adopters of broadband

BARRIER Cost, Perception, and Relevance

STRATEGY Increase broadband awareness using a quarterly media campaign (television, radio and print)

CETF's Get Connected! campaign was based on consumer research conducted by a professional marketing firm. The research uncovered barriers to broadband adoption, and CETF developed messages to directly address those barriers. For example, since cost was identified as a key barrier, public service announcement (PSA) messaging emphasized how using the Internet could help families save money and simplify daily tasks.

To reach the most common low-income populations in the target market, most of the ads were in Spanish, with others in English and Chinese. CETF also varied the delivery medium, using a combination of TV, radio, and print advertising. The advertising instructed people to call 2-1-1, a statewide information and referral service, for more information about ordering broadband or where to find digital literacy training. To further demonstrate how the Internet is relevant to individuals' lives, CETF featured a new broadband awareness theme each quarter. Themes included "Filing for the Earned Income Tax Credit" at the beginning of the year and "Get Connected for School" in the fall. The back-to-school media effort in the greater Los Angeles and Fresno regions included radio, television, Spanish-language newspaper ads, and ads placed on 214 outdoor bus shelters. This campaign reached 2.2 million people from July through September 2012.

RESOURCES

- @ Resource finder: <http://www.getconnectedtoday.com/find-broadband>
- @ Commercials and PSAs: <http://www.youtube.com/user/cetfund>



POPULATION Non-adopters of broadband

BARRIER Relevance

STRATEGY Create videos spotlighting individuals whose lives have been enriched by broadband

To encourage Wisconsin residents to get online, **UWEX** created videos that demonstrated the value of broadband. The videos spotlighted Wisconsin residents whose lives had been enhanced by broadband. For example, residents shared stories about using the Internet to work remotely, take graduate school classes, or run their small businesses. UWEX created three types of videos:

- ★ In-depth case studies, approximately eight to 11 minutes each
- ★ A short television public service announcement, 30 seconds long
- ★ Testimonial interviews, approximately three minutes each

These videos have been used at events, promoted through partner communications and social media, and given to media as background for stories.

RESOURCES

@ Videos: <http://broadband.uwex.edu/resources/broadband-videos/>

@ Videos: http://www.youtube.com/playlist?list=PLjPUBxi_Dgvtz5BarDQjZJN1ICKBzN8Fv&feature=plcp



POPULATION Hispanic small business owners

BARRIER Relevance

STRATEGY Host weekly radio program to provide regular opportunities to increase awareness among Spanish speakers

MEDA partnered with organizations across the country to help Hispanics start businesses and take advantage of economic opportunities through the Internet. The Hispanic Economic Development Corporation (HEDC) of Kansas City, a MEDA subrecipient, used radio to publicize training opportunities throughout its service area because radio is a traditional, ubiquitous, and affordable medium. HEDC broadcasted a weekly 30-minute show, "El Momento Empresarial" (Business Time), on a popular Spanish-language AM station. The host and guests talked about computer training, online business applications, and educational opportunities. HEDC offered an array of both basic digital literacy training and small business development courses.

RESOURCES

@ Radio show on Mondays at 6 p.m.: <http://tunein.com/station/?stationId=26369>



HOW-TO: RECRUIT USING WORD OF MOUTH

“At Older Adults Technology Services (OATS), we have found the best way to recruit for classes is good old-fashioned word of mouth. We brief the local partner site staff on the program, expectations, and requirements, and they do the outreach in their community—making announcements at events, knocking on doors, or holding information sessions. That’s sufficient to fill the first class and then, once the seniors have a good experience in the trainings, they tell their friends and we never have to do much recruitment after that!”

— Thomas Kamber,
Executive Director of OATS



POPULATION Low-income residents

BARRIER Access and Availability

STRATEGY Partner with Philadelphia’s 3-1-1 service and create an online tool to promote public computer centers

Philadelphia’s *Freedom Rings Partnership* is a citywide collaboration between two BTOP grant recipients, the City of Philadelphia and the *Urban Affairs Coalition*, and their many community partners. Together they established 70 “Keypots” in low-income areas of the city, where public Internet access, computer classes, and one-on-one training are available. To promote these Keypots, Freedom Rings implemented two awareness strategies. First, its partnership with the Philly311 support hotline connected residents to information and services. Freedom Rings trained 3-1-1 supervisors and provided them with a “Keypots Frequently Asked Questions” manual to ensure that call center staffers could help residents find Keypot locations in their communities. Additionally, Freedom Rings created a website, [phillykeyspots.org](https://www.phillykeyspots.org), which included a calendar and a ZIP code locator tool. Users could search training class descriptions and schedules. Although the target population may not have been skilled using the Internet or may not have had access, partner agencies and social service organizations used the website to help individuals find services they needed. More than 100,000 visitors accessed the site between January 2012 and January 2013.

RESOURCES

@ Training locator: <https://www.phillykeyspots.org/events>

@ Local resource locator: <https://www.phillykeyspots.org/resources>

Outreach

Organizations engage their target populations in a wide variety of high-touch outreach activities. Some organizations, such as Michigan State University, the Appalachian Center for Collaborative and Engaged Learning (ACCEL), and Tribal Digital Village (TDV), used events to draw community members together. Others, such as Coppin State University and Las Vegas-Clark County Urban League (LVUL), established partnerships to reach community members outside of their usual audiences. The School Board of Miami-Dade County and the City of Chicago relied on personal relationships with community members to encourage participation in training and other broadband adoption programs.



POPULATION Low-income urban residents

BARRIER Perception and Relevance

STRATEGY Offer hands-on experiences with broadband in the residents' neighborhoods

Michigan State University's (MSU) BTOP broadband adoption project worked with community organizations to increase broadband subscribership and encourage community members to use broadband to improve their lives. As part of the project, MSU supported the *Detroit Digital Justice Coalition* (DDJC), a collaboration of community organizations, artists, educators, technologists, and entrepreneurs, that created a unique awareness event called DiscoTech (short for "Discovering Technology").

DDJC held DiscoTechs every few months in various community locations and asked all coalition members to share or teach at the event. The environment was informal and fun, encouraging peers to share and teach each other. For example, DDJC member Environmental Justice created workshops on "e-waste" to teach about proper disposal of electronic equipment, and a youth media group taught social networking and email skills. Coalition members recruited attendees by promoting the DiscoTech to their members and constituents. One trainer wrote, "As a mother, I felt like our DiscoTechs were a great opportunity to mix up the generations. It was so great to come in and see all the equipment, to see youth using the equipment, and to have one of them ask, 'What do you want to learn?' That's a big deal. That type of interaction between seniors and teens breaks down barriers...this is community."

RESOURCES

@ Discotech information guide: http://detroitdj.com/wp-content/uploads/2010/09/discotech_ddjc2010.pdf



POPULATION Rural community residents

BARRIER Relevance

STRATEGY Partner with a rural electric cooperative

ACCEL, a subrecipient of One Community's *Connect Your Community* project, found that Frontier Power, a rural electric cooperative, was a valuable outreach partner. Each year, Frontier Power holds a membership meeting that includes a social gathering. This meeting provided ACCEL with the opportunity to reach a significant number of rural residents who were not using the Internet, and benefitted from the members' established trust in the cooperative. Standing near the food line to ensure high visibility, ACCEL staff distributed a four-question survey that included questions such as, "Can we contact you with information about computer classes?" As an incentive, Frontier members who filled out the survey and provided contact information were entered to win a gas card. Since the event, 90 percent of the respondents have participated in a computer class.

RESOURCES

@ Sample class participation survey: <https://docs.google.com/a/accelonline.org/spreadsheet/viewform?formkey=dG1kMDRka24tUVNSWlJHT3pVZ1I2S1E6MQ#gid=0>



POPULATION Native Americans

BARRIER Relevance

STRATEGY Use existing tribal meetings to raise awareness among Native Americans living on reservations

ZeroDivide partnered with TDV to bring broadband Internet to Native Americans living on 19 reservations in southern California. TDV found that many Native Americans in their community did not think that the Internet had much to offer them. TDV organized awareness sessions, but found that few attended. So TDV decided to modify its outreach strategy. Knowing that most members of the tribes attended the standing tribal council meetings, TDV received permission to give short presentations during the tribal meetings about the benefits of the Internet, training classes, and other access services that TDV offers. As a result, they reached more community members and generated much more interest. TDV reached more than 1,700 community members through its outreach and training activities, and its services helped more than 275 households obtain broadband subscriptions.



POPULATION Low-income urban residents

BARRIER Skills

STRATEGY Partner with community organizations

Coppin State University's *Coppin Heights-Rosemont Family Computer Center* is located on the campus of the urban, historically-black institution and is dedicated to use by community members. Recognizing that some community members might be intimidated by the university setting of the computer center, founders of the center built relationships with community organizations, such as neighborhood associations, schools, youth organizations, and churches, to create trust and encourage community members to visit the center. Staff from the center worked with the community partners to reach residents and developed training programs in response to residents' needs and interests. In addition, the center developed strong partnerships with local schools, and thousands of school children participated in digital storytelling, digital yearbook production, graphic design, and world studies training programs. Many local schools were unable to offer computer classes before the partnership with the center.

RESOURCES

@ Class schedules: http://www.chrcomputercenter.org/training/academic_classes?filter=all

"The Detroit Digital Justice Coalition (DDJC) decided whether we received the stimulus funding or not, we would work together to ensure that the skills and tools needed to communicate in this digital age are accessible to our communities. In order to do this, we identified the need to create a space where people can discover technology together, learn at their own pace, and learn from people who are accessible and understand the context of their neighborhoods and communities."

— From the Digital Justice Coalition, Issue 4 (2012).



POPULATION Veterans

BARRIER Relevance

STRATEGY Partner with Veterans Affairs and other social service agencies serving veterans

Las Vegas Urban League (LVUL) provided technology training and one-on-one support to veterans to help them obtain employment, housing, medical, and other benefits. LVUL conducted outreach to veterans through partnerships with a Veterans Affairs (VA) Medical Center, other social service agencies, and state job agencies.

LVUL outreach coordinators developed relationships with a wide range of social service organizations and also received referrals from other agencies via word of mouth. Particularly helpful were the veterans coordinators' relationships with the VA Medical Center's homeless coordinator and the employment specialist team, which provided case management services to veterans. Through these partnerships, veterans learned about the training and computer access available through the LVUL. Staff at most centers were knowledgeable about veteran benefits and helped guide veterans to online benefit resources. These connections also helped the LVUL know where to refer veterans when they needed specific kinds of support.

RESOURCES

@ Veterans support services: <http://lvul.org/veterans-employment-training-program/>



POPULATION Culturally diverse, low-income parents and students

BARRIER Cost and Relevance

STRATEGY Work with school-based school liaisons to connect with parents and students and communicate program benefits

The *School Board of Miami-Dade County*, Florida (School Board) used its BTOP funds to provide computers, training, and broadband Internet service to low-income families. In culturally diverse Miami-Dade County, many of the families that participated in the program included Hispanics, Haitians, and others. The School Board engaged site-based school liaisons at each of the participating schools to help implement the BTOP program. The school liaisons provided a face-to-face point of contact for parents and students throughout the school year and explained both how the program worked and how the tools provided by the program (i.e., a computer and broadband Internet service) could support their child's academic achievement. The school-based liaisons already worked at each of the participating schools and were typically members of community groups the schools serve. The school liaisons assisted with program enrollment and were able to increase participation in the program. Through September 2012, the School Board distributed more than 5,000 computers to low-income families.

RESOURCES:

@ Parent portal: <http://www.dadeschools.net/parents.asp>

@ LINK program: <http://link.dadeschools.net/>

"We do not assume 'if you build it they will come'. We assumed we would need to recruit aggressively. We spent a lot of time in the community asking people how they could best utilize the center, which then resulted in strong relationships with the community."

— York Bradshaw,
Executive Director of Coppin Heights-Rosemont Family Computer Center



Chapter 4 Home Computer & Broadband Service

The challenges of acquiring and maintaining a home computer are many: what to buy, how to compare features and prices, how much to budget for upgrades and maintenance, and how long the computer will last relative to a budget. For households that have never owned a computer, this combination of barriers can be overwhelming. Twenty-four percent of non-adopters in America cite the cost of broadband as the major barrier to adoption and 15 percent report that they do not have a computer that is adequate for broadband use.¹⁴ Acquiring broadband service presents another set of challenges: technical jargon, unclear price plans, hidden costs, lengthy contracts, and hard-to-compare service offerings.

Successful broadband adoption projects address these challenges by developing multiple strategies to make owning a computer and using a broadband connection less expensive and confusing. This section includes ideas for providing low-cost or subsidized home computers and broadband access, and for helping consumers make smart buying choices.

Resource:

@ A comparison checklist can be a useful tool to help determine whether a program should partner with other organizations to deliver discounted broadband service and/or low-cost or subsidized computers. A sample comparison checklist is included on page 59.

Home Computer Subsidies, Discounts & Support

Some broadband adoption programs purchase new desktops, laptops, or tablets to distribute, while others partner with computer refurbishing organizations to provide hardware to consumers. Local equipment sources and refurbishing organizations can reduce shipping and transportation costs and may provide better customer service than large national providers. Microsoft also maintains a list of **Microsoft Certified Refurbishers** for computers running Microsoft Windows. When finding a qualified refurbisher is not an option, some broadband adoption programs have created their own computer refurbishing operations.

The examples below demonstrate multiple ways to help program participants obtain low-cost equipment and maintain it once installed at home. Organizations like PCs for People and Future Generations Graduate School offered refurbished computers. CFY (formerly Computers for Youth) provided program participants with new computers complemented by a number of software packages. Others, such as Tampa Housing Authority, also provided technical support to participants to keep interest and access high.

14 Federal Communications Commission, "National Broadband Plan" (2010).



POPULATION Low-income residents in rural communities

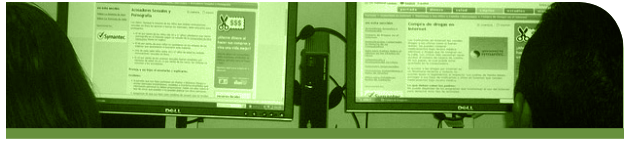
BARRIER Cost

STRATEGY Offer low-cost refurbished computers with affordable maintenance costs

The C.K. Blandin Foundation worked in rural areas of Minnesota and partnered with *PCs for People*, a local computer refurbishing nonprofit, to provide affordable refurbished computers to program participants. PCs for People's self-sustaining model provided refurbished computers to eligible individuals (those with incomes below 150 percent of the poverty level). The organization accepted voluntary donations from program participants to help support the program, with suggested donations higher for newer computers: up to \$29 for a computer eight to 10 years old, or \$50+ for a computer three to five years old. To ensure a steady supply of donated computers, PCs for People provided free recycling, pick up, and data wiping (erasing the data on the computer) to bulk computer donors. Computers came with a 90-day warranty, and PCs for People offered repairs for a \$25 flat fee, including parts. Recognizing that computer repair fees can be prohibitive, PCs for People repaired any computer owned by a program-eligible individual at the \$25 flat rate, regardless of where the computer was purchased. Through this partnership, PCs for People distributed more than 850 computers to families through September 2012.

RESOURCES

- @ Eligibility information: <http://www.pcsforpeople.com/index.php/receive/eligibility>
 - @ Donation information: <http://www.pcsforpeople.com/index.php/donate>
-



POPULATION Low-income residents in urban communities

BARRIER Cost and Relevance

STRATEGY Offer subsidized computers, opportunities for discounted broadband service, technical support, and digital literacy training

Through partnerships with New York City- and Los Angeles-based public schools in which 75 percent or more students participated in a free or reduced-price lunch program, *CFY* distributed "Home Learning Centers"—desktop computers with more than 30 educational software programs installed. To qualify for a Home Learning Center, students (generally in 6th grade) and their parents or caregivers attended a four-hour Family Learning Workshop held on a Saturday at the student's school. The workshop taught digital literacy skills, with a focus on how computers and the Internet could advance children's education and how to enroll in broadband service. At the conclusion of the workshop, the family received a Home Learning Center and could apply for discounted broadband service, if available. In addition, CFY marked each computer with a toll-free number for 24/7 technical support (provided in English and Spanish). If the computer needed repairs, CFY provided "swap out" services to replace the computer on the spot.

CFY family training materials were used to train more than 37,000 middle school students and their parents and guardians at hands-on Family Learning Workshops in NYC (as part of the NYC Connected Learning Program, operated by the NYC Department of Information Technology and Telecommunication and the NYC Department of Education) and Los Angeles (as part of the CFY/LAUSD Family Broadband Engagement Program).

RESOURCES

- @ How to donate computers: <http://cfy.org/get-involved/donate-computers/>
-



POPULATION Residents in rural communities

BARRIER Cost

STRATEGY Provide low-cost refurbished computers

Through its 60 computer labs in rural fire and rescue stations across West Virginia, *Future Generations Graduate School* offered low-cost refurbished laptops to any interested community member. The organization partnered with *Mission West Virginia*, a local nonprofit organization, to sell computers at cost. Each refurbished laptop was sold with the *Ubuntu operating system* (an open source program) and *Open Office™* (an open source set of software programs for word processing, spreadsheets, presentations, and databases) already installed. Future Generations decided to use Ubuntu to help avoid viruses and malware, the most common technical support issues for home computer owners, as well as to introduce open source/free software to lab visitors. Users became familiar with the open source software and used those same skills on the refurbished computers that they purchased.

RESOURCES

@ Computer store: <http://www.futurewv.org/store>



POPULATION Low-income, public housing residents

BARRIER Cost

STRATEGY Employ and train residents to troubleshoot and repair computers

Tampa Housing Authority (THA) used a grant from BTOP to provide Internet access in all of their more than 3,500 public housing and low-income units. In addition, THA implemented a "SmartUnit" pilot program to install permanent computer kiosks in participating housing units. Inexperienced computer owners can become frustrated when they encounter problems, so THA established a dedicated call center and a technical support team, the "MOB (Maintenance of Broadband) squad." The MOB squad made house calls to help residents troubleshoot their in-home computers and provided Internet service support. In addition, THA trained and employed housing authority residents as MOB squad staff. Positions were limited to six-month terms to provide more residents with the opportunity to receive training and on-the-job experience. Nearly 200 households used the MOB squad services as of spring 2013.

RESOURCES

@ MOB Squad Qualifications: http://www2.ntia.doc.gov/files/mob_squad_tech_support_team_introduction.pdf



HOW-TO: FIND OPEN SOURCE SOFTWARE

With "open source" software, the source code (i.e. the instructions that computer programmers write to direct the operations of the computer) is freely made available for use or modification by others. You can search for and download open source software from *SourceForge*.



HOW-TO: UNDERSTAND THE COSTS OF COMPUTER REFURBISHING

The price of a refurbished computer can vary greatly. To understand why, take a look at the costs of computer refurbishing and how they impact the final price.

✦ Source of used computers to refurbish

- ◆ Purchasing used computers
- ◆ Receiving large-scale computer donations: these donations often require the refurbishing organization to pay for “hidden” costs, such as transportation
- ◆ Receiving individual computer donations: the type, configuration, and quality of the donated computers vary, making it difficult to standardize their operations

✦ Labor costs

- ◆ Hiring qualified staff
- ◆ Relying on nonprofit partners to provide volunteers: if the refurbisher receives too few qualified volunteers, operating costs can be unpredictable

✦ Storage space

- ◆ Purchasing warehouse and/or storage space
- ◆ Relying on donated space for operations and storage: this option can significantly reduce cost, but may leave the program at the mercy of the donor

✦ Software licenses

- ◆ Purchasing operating system software and other programs, such as word processing: this software can be expensive, even if purchased in bulk by a nonprofit organization
- ◆ Using open source software: this software is inexpensive and often free but can be incompatible with other software

Broadband Service Subsidies & Discounts

Low-cost broadband service is more readily available in some geographic areas than others. In areas where service costs are high, broadband adoption programs may be able to negotiate discounts for program participants with local service providers, or may pay the provider to cover all or a portion of program participants' subscriptions. Another option is to partner with broadband service providers, thus functioning as resellers. This reduces the cost to the provider of managing many small accounts, but the reseller has to be prepared to handle credit and payment issues, share data with the provider, and staff the discount program. Many broadband adoption programs require program participants to complete training programs prior to receiving a computer or low-cost broadband service to help ensure that they have the digital literacy skills to use those benefits most effectively.



POPULATION New home computer owners without broadband service

BARRIER Cost

STRATEGY Partner with low-cost broadband program and provide partial service subsidy

In Philadelphia, the *Freedom Rings Partnership* had an agreement with *Mobile Citizen* to resell Clear 4G broadband services to program participants. Mobile Citizen is a nonprofit organization that resells Clear services to schools and other nonprofits. The Freedom Rings Partnership subsidized the cost of modems so that program participants only paid a monthly charge of \$10 for Internet service plus a \$4.95 administrative fee.

RESOURCES

- @ Mobile Citizen coverage map: <http://mobilecitizen.org/coverage>
- @ Mobile Citizen service plans: <http://mobilecitizen.org/service-plans-equipment>



POPULATION Public housing residents who have no available low-cost broadband services

BARRIER Cost

STRATEGY Create a wireless mesh network

Lorain County Community College, a subrecipient of *OneCommunity*, serves a locality about 30 miles west of Cleveland, Ohio. Although near a major city, the area had no low-cost broadband options until recently. To help low-income residents afford broadband, the community college partnered with the Lorain Metropolitan Housing Authority (LMHA) to set up and maintain wireless "mesh networks" in five of LMHA's senior and family high-rise apartment buildings. Local foundation funds subsidized the cost of the mesh network hardware and LMHA paid the monthly broadband subscription fee. As a result, residents had free Internet access for Wi-Fi-enabled devices, including computers, tablets, and smartphones.

RESOURCES

- @ Presentation: <http://slideplayer.com/slide/717364/>

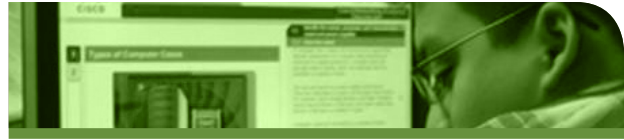


POPULATION Home computer owners without broadband service

BARRIER Cost

STRATEGY Encourage local ISPs to provide discount broadband services across the state

Connect Arkansas, a project of the Arkansas Capital Corporation, has implemented two NTIA-funded projects. Through a Broadband Mapping grant, Connect Arkansas collected information about *broadband availability* throughout the state. With a BTOP grant, it promoted broadband adoption through a number of program activities. A goal of both projects was to actively encourage local broadband providers to offer a low-cost broadband option for households with children in the free- or reduced-price school lunch program. Families applied for low cost broadband through a Connect Arkansas website. Connect Arkansas then reviewed the applicant's eligibility qualifications for the program, approved or rejected the applicant based on the documentation provided, and forwarded the applicant's contact information via email to broadband providers that served the applicant's address. The broadband providers were expected to follow up with potential customers and made a final determination as to whether the applicant was eligible for discounted service. Each applicant also received a postcard that showed which broadband providers were notified and how to contact them.



POPULATION New home computer owners without broadband service

BARRIER Cost and Perception

STRATEGY Show non-adopters how broadband can help them save money

Many non-adopters see Internet access as an unnecessary household expense. The *City of Boston* partnered with *Technology Goes Home* to teach low-income families how to use broadband to improve their lives. For example, instructors taught participants how to save money with broadband using curriculum from CETF's *Club Digital*. They compared the cost of check cashing to Internet banking, and the cost of phone cards to using services like Google Phone or Skype™. This information helped participants identify ways to reduce other expenses so that they could afford Internet service. Upon completion, 93 percent of *Technology Goes Home* program participants signed up for Internet service.

The City of Boston also succeeded in negotiating a discounted subscription price with Comcast, which could be used by any family (even those without children) whose household income would qualify for the free or reduced-price lunch program. Through September 2012, TGH reached more than 7,100 individuals and helped more than 1,400 families acquire new broadband subscriptions.



POPULATION 6th-grade students and their families

BARRIER Cost

STRATEGY Negotiate discounted broadband service with multiple providers

The *New York City Department of Information Technology and Telecommunications* (DoITT) and its partners negotiated discounted broadband options with Cablevision and Time Warner Cable for participants in its school-based family broadband adoption programs. The Department of Education's Connected Learning team and CFY created an online system where families could apply for a discounted subscription. The system identified which broadband provider was associated with the applicant's address. Data submitted through the system was available to the provider, who checked eligibility for service. The CFY call center and the Connected Learning program team supported families throughout the enrollment process by providing multi-lingual service assistance, and, when appropriate, working with families and providers to set up payment plans. Six months after a family attended a workshop, CFY called them to ask about their current subscription status. If they had not yet subscribed, CFY offered to troubleshoot barriers to accessing broadband services. As a result of this collaborative effort, nearly 8,000 households subscribed to broadband services as of September 2012.

RESOURCES

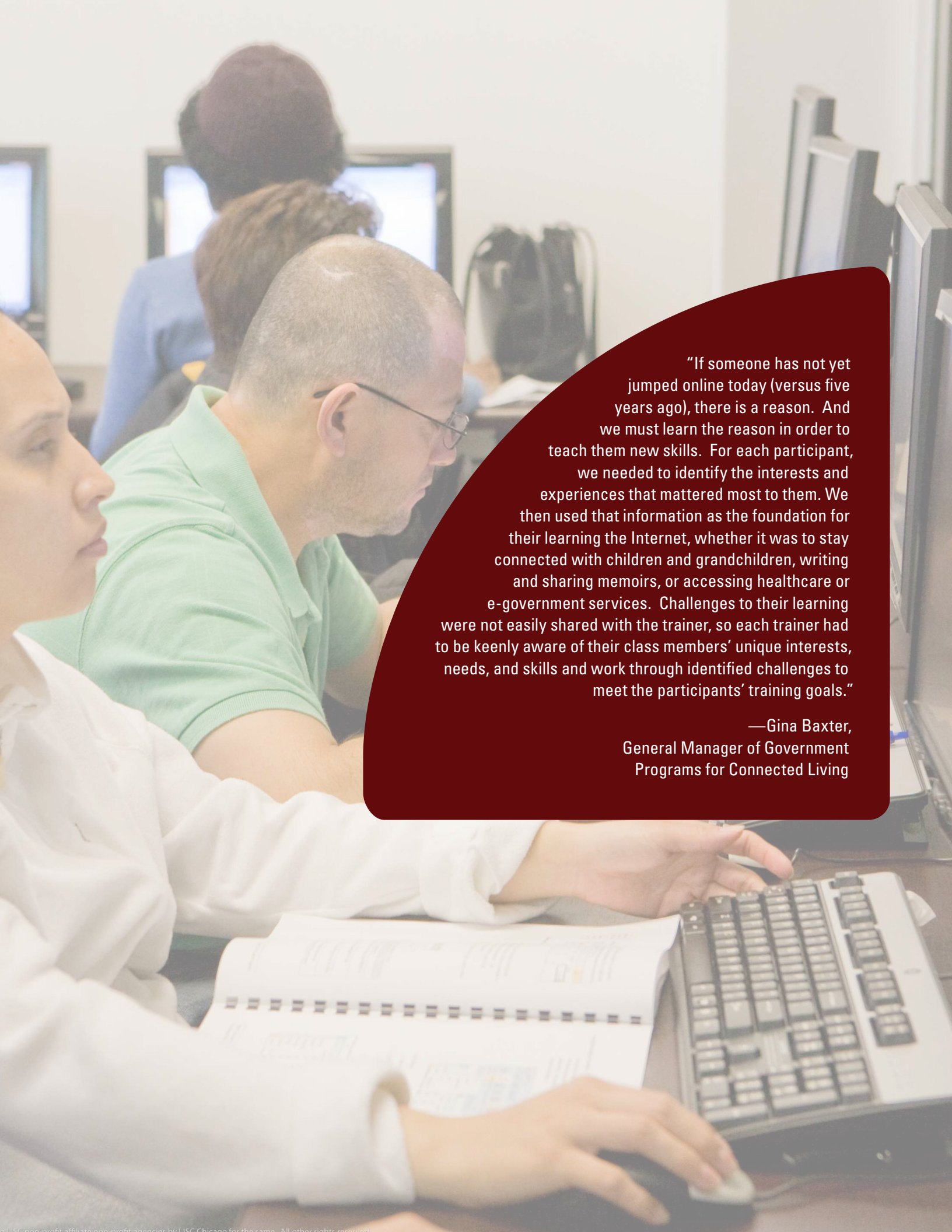
@ Although the Discounted Broadband Portal is not publicly accessible, CFY would be happy to share the detailed design and screenshots of the portal—including features for families, broadband providers, and school staff—and discuss the lessons learned during its development and implementation. CFY contact: info@cfy.org



HOW-TO: DEVELOP PUBLIC-PRIVATE PARTNERSHIPS

“There are great opportunities to work together on broadband adoption with the providers and our local community organizations, libraries, and schools. For instance, we found a champion at a broadband provider company and were able to connect her with public computing center staff to do outreach and education events for some of our low-income Chinese and Vietnamese communities. This engaged more of the company staff and has also benefited the community organizations involved.”

— David Keyes,
Community Technology Program
Director at The City of Seattle
Partner of the EdLab Group



"If someone has not yet jumped online today (versus five years ago), there is a reason. And we must learn the reason in order to teach them new skills. For each participant, we needed to identify the interests and experiences that mattered most to them. We then used that information as the foundation for their learning the Internet, whether it was to stay connected with children and grandchildren, writing and sharing memoirs, or accessing healthcare or e-government services. Challenges to their learning were not easily shared with the trainer, so each trainer had to be keenly aware of their class members' unique interests, needs, and skills and work through identified challenges to meet the participants' training goals."

—Gina Baxter,
General Manager of Government
Programs for Connected Living

Chapter 5 Training: Planning & Delivery

Lack of computer or digital literacy skills among non-adopters is a key barrier that must be overcome to promote broadband adoption. Some non-adopters may be open to the idea of using the Internet, but may not know how to use a browser, conduct an Internet search, or send an email. Others may have basic skills and may be open to taking advantage of more advanced opportunities, such as social networking or photo editing. Determining what training classes to offer is just one piece of the puzzle. Programs also make decisions on how to structure and schedule their training sessions and educational events so as to engage as many individuals as possible.

Digital literacy training must be appropriate for the skill levels, interests, and needs of the target population. When planning training, consider important characteristics of the target group, including age, familiarity with computers and the Internet, cultural background, literacy level, English language proficiency, disability status, keyboarding skills, and prior classroom experience.

Technology training comes with some built-in challenges, such as learners with different skill levels in the same class, the need for one-on-one assistance, and the pace of change in computer and Internet hardware and applications. Careful planning and regular requests for feedback from learners can make classes more effective and enjoyable.

When planning classes, consider all of these factors. The choices of time, place, language, and instructor can be critical to the success of the program and to the effectiveness of the training.

Resource:

@ A planning checklist can be a useful tool to help organizations make key decisions, such as location, hardware needed, outreach, and instructors. A sample planning checklist is included on page 60.

Time & Place

The physical setting and schedule of training events is key to attracting and retaining new class attendees. Is the location safe, convenient, and welcoming to users of different abilities? Are training courses offered at convenient times, and how much time must an individual commit to completion of the course? Is the training equipment up-to-date and working properly? Perhaps most important, does the instructor create an atmosphere that is positive and supportive?

Many BTOP recipients have made decisions about when and where to offer training sessions based on the schedules and habits of their target audiences. The Monterey County Office of Education and the Foundation for California Community Colleges targeted employed workers and scheduled training outside of business hours. La Conner Regional Library (a subrecipient of the EdLab Group Foundation) and the City of El Paso addressed transportation/location barriers by taking training into the community using mobile computer labs.



HOW-TO: TEACH DIGITAL LITERACY

- ✦ Be prepared for a wide range of skill levels and variety in participant questions.
- ✦ Provide class handouts and/or manuals, especially for older adults and those learning basic skills.
- ✦ Use graphic-heavy handouts and manuals for illiterate and low-literacy adults.
- ✦ Look for opportunities to teach how to find answers and information—every question can be a learning opportunity!



POPULATION Migrant workers

BARRIER Skills

STRATEGY Schedule classes around seasons and field hours

Community Information Center, a subrecipient of the *Monterey County Office of Education's* BTOP project, designed its training programs to fit the schedules of migrant workers in its service area in California. Community Information Center determined that the best time to hold class during harvest season was during the evenings from 6:30–8 p.m. because it gave the workers time to eat a quick dinner before attending class. During the off-season, from late November through March, Community Information Center held classes earlier in the day and offered more Spanish-language classes to accommodate the increased availability of migrant workers.

RESOURCES

- @ Online class schedule: <http://www.connectionmonterey.org/pages/class-schedule>
- @ Workshop flyers: <http://www.connectionmonterey.org/galleries/8/images>
- @ TechMobile information and flyers: <http://www.connectionmonterey.org/pages/techmobile>



POPULATION Rural community residents

BARRIER Skills

STRATEGY Hold classes at partner organizations using a mobile lab

The La Conner Regional Library, an *EdLab Group* subrecipient, serves rural Skagit County in Washington. The library building was not large enough to hold a computer lab, and its constituents were dispersed across a large area. To address these issues and meet the needs of the community, La Conner Regional Library provided computer classes using a mobile lab. The library received requests from various groups to teach classes at their centers, with some of the most popular teaching locations being senior housing complexes. The mobile lab equipment included 10 PCs, a projector, and two Wi-Fi hotspots, all transported in a large container (a “suitcase”). The librarian who taught the computer classes brought an assistant to help set up and repack the equipment.

RESOURCES

- @ Guide to organizing a mobile lab: <http://techsoupforlibraries.org/blog/edge-benchmarks-mobile-computer-labs>



HOW-TO: ESTABLISH ACCESSIBILITY AND USE ASSISTIVE TECHNOLOGY

For people with disabilities, using a computer can pose a multitude of unique barriers, from hard-to-manipulate keyboards to hard-to-read screen text. “Accessibility” refers to making equipment and software easier to use by modifying the physical environment and computer software and hardware. “Assistive technology” refers to the devices, software, and specialized equipment that are used to modify the environment. Seattle’s STAR (Special Technology Access Resource) is an accessible computer lab that also provides accessibility training to instructors and volunteers from other computer labs. STAR’s mission is to empower people of widely varying abilities and disabilities to build community using computers, the Internet, and assistive technology.

Additional Information on accessibility strategies and techniques can be found at: <http://www.starofseattle.org/pages/AssistiveTechnology.aspx>



POPULATION Low-income working parents

BARRIER Skills

STRATEGY Schedule classes when most convenient to parents

Great Valley Center, a subrecipient of the *Foundation for California Community Colleges*, conducted outreach and provided digital literacy training for residents in California's rural Central Valley region. The organization emphasized reaching low-income Spanish speakers. Great Valley Center wanted to engage more parents in its training classes, and recognized that parents needed child care in order to attend classes. Great Valley Center held training sessions at schools, and scheduled 8:30–11 a.m. classes so that stay-at-home parents could attend after dropping off their children at school in the morning. The center also offered classes from 6–8 p.m., to allow working parents to attend. In addition, the center's partner schools provided child care during the classes to make it easier for parents with small children to participate. Great Valley Center discovered that holding the class in a place that parents frequent increased the likelihood that parents would attend.



POPULATION Low-income residents with limited ability to travel

BARRIER Access and Availability

STRATEGY Transport mobile computer lab to convenient locations

The *City of El Paso* supported nearly 90 public computer centers that served approximately 52,600 individuals per week. Widespread lack of access to the Internet and other computer resources was compounded by a lack of public transportation in the poorest sections of the metro area, making it difficult for many residents to travel to El Paso Public Library (EPPL) facilities and other locations that offered public access to computers.

The BTOP mobile technology program of EPPL addressed these challenges with a mobile lab on wheels. EPPL constructed a customized instructional vehicle, TechMobile, with 11 student workstations and one instructor workstation, a printer, an electronic white board, and an interactive 40" LCD flat-panel screen. The van included both 4G cellular and satellite data communications capabilities. The van also had a lift mechanism so that individuals in wheelchairs and with other disabilities could use it. The TechMobile's schedule varied weekly depending on need and requests from community institutions, including senior centers, the sheriff's department, elementary schools, city and town halls, and an adult learning center. EPPL also delivered bilingual computer classes, ranging from beginner to advanced levels, to community members who might not otherwise have had access to training. EPPL trained more than 19,000 individuals from July–September 2012 through the mobile lab and other public computer center sites.

RESOURCES

@ Map of class locations: <http://gis.elpasotexas.gov/btop/index.html>



HOW-TO: CHOOSE A MOBILE LAB

Mobile labs are a convenient way to get computers and other equipment out to the community. However, which one is right for the program? Should the program convert a van into a computer lab? Should they simply pack a container with laptops and transport them as necessary? Below are a few benefits and challenges of each option to consider when deciding which type of mobile lab is right for the program and the target population.

MOBILE LAB IN A VEHICLE

Benefits

- ✦ Equipped with PCs
- ✦ Americans with Disabilities Act (ADA)-compliant
- ✦ Self-contained power and classroom
- ✦ Can be equipped with LCD flat-screen, electronic white board, and printer
- ✦ Storage space for supplies and instructional materials
- ✦ High visibility in the community

Challenges

- ✦ High initial cost of customizing a vehicle
- ✦ Ongoing cost of fuel and maintenance
- ✦ Need for qualified drivers

MOBILE LAB IN A SUITCASE

Benefits

- ✦ Very portable
- ✦ Participants feel comfortable in a partner location
- ✦ Possible Internet access
- ✦ Lower maintenance costs

Challenges

- ✦ Suitcases are heavy
- ✦ Need to bring Internet connectivity (cables, hotspots and/or air cards) to ensure lab will have Internet access



HOW-TO: EASE STUDENT ANXIETY

“The biggest obstacle to overcome for a student is the anxiety they have in approaching a computer for the first time. The instructor’s people skills and ability to connect to the student and meet them on their level is just as important as teaching the technical skills. You need both. The atmosphere must be relaxed, comfortable and inviting. We encourage students to ask questions, to contact us in-between classes if they need help, give as much support as we can to the instruction, encourage them to practice and discuss how to implement technology and how it benefits our lives. The ‘teaching’ is more of a conversation between ‘trainers’ and ‘trainees’.”

— Susan Corbett,
CEO of Axiom Technologies

Trainers: Instructors, Volunteers, Peers

One of the most important elements of implementing a strong training program is selecting high-quality trainers who can nurture positive relationships with participants. For some organizations, the best option is to hire professional instructors. Texas State Library and Archive Commission (TSLAC), Technology for All, and Connected Living all took steps to prepare and support trainers. For others, paid instructors may not be financially feasible or there may not be enough qualified people available to fill the positions. Instead, Urban Affairs Coalition used peer cohorts to augment instructor-led training, and the Foundation for California Community Colleges engaged young people to provide training to community members. In planning classes, focus on a few key areas. Determine the necessary instructor-to-student ratio, find ways to support and prepare the instructors, and look for instructors who are familiar with the target population.



POPULATION Non-broadband adopters

BARRIER Skills

STRATEGY Provide a consistent instructor and peer support

Program participants feel more comfortable with an instructor they trust and with whom they have developed a relationship. *FIGHT*, a subrecipient of the *Urban Affairs Coalition* in Philadelphia, structured its digital training program into “cohorts.” Each cohort had one instructor, and the participants attended a series of classes together to create peer support and motivation to continue learning. *FIGHT* instructors also attended one another’s sessions so that participants developed relationships with multiple instructors. When one instructor needed to substitute for another, the participants were familiar with the substitute.



POPULATION Digital literacy trainers

BARRIER Skills

STRATEGY Conduct meetings for trainers to discuss instructional strategies

Technology for All (TFA) and its partner, Austin Free Net, supported 90 public computer centers in Houston, Austin, San Antonio, and a number of rural counties in east Texas. BTOP enabled TFA to expand its public access and training services rapidly, requiring TFA to hire a number of new trainers in a short period of time. TFA selected trainers who had strong teaching skills and then focused on preparing the trainers to teach digital literacy curricula. TFA held weekly meetings to review training curricula, discuss teaching strategies, and address challenges instructors faced. As a result, the TFA trainers were prepared to conduct a variety of training sessions in the public computer center sites.

RESOURCES

@ Texas Connects Coalition: <http://www.techforall.org/txc2/>



HOW-TO: FIND INSTRUCTORS FOR OLDER STUDENTS

“Training requires comfort with common software applications and devices. Equally important is a great personality for working with older adults. A successful individual will possess a high degree of patience, flexibility, creativity, and problem-solving ability, along with a sense of humor and a commitment to social change.”

— From the OATS Job Description for “Technology Trainer for Older Adults”



POPULATION Seniors

BARRIER Perception and Skills

STRATEGY Use culturally-sensitive instructors to create a positive learning environment with individuals challenged by learning new concepts and skills

Connected Living provided Internet and computer skills training in 23 subsidized public and private low-income senior housing communities in Illinois. From experience, Connected Living knew that instructors working with seniors needed to be sensitive to various participant challenges, most of which participants will not discuss openly. For example, significant numbers of low-income senior program participants are challenged by mental, social, and learning disabilities, literacy issues, and physical challenges of poor vision or hearing impairment. A sensitive instructor could spot these challenges and respond with assistance and alternative solutions, winning the respect and trust of the program participants. Connected Living trained more than 5,300 individuals through its BTOP project.

RESOURCES

@ Sample instructor job description: http://www2.ntia.doc.gov/files/connectedliving_cpm_job_posting.pdf



POPULATION Low-income college students and community members

BARRIER Perception

STRATEGY Work with trusted family members to provide computer training

The *Foundation for California Community Colleges* distributed computers with wireless modems and provided training to socioeconomically disadvantaged (mostly Latino) students currently enrolled in the Mathematics, Engineering, and Science Achievement (MESA) program at local community colleges. Participating MESA students were required to provide a minimum of 12 hours of computer training in the community after receiving their laptops. Many trained family members or friends who had been hesitant to learn how to use a computer, resulting in intergenerational training that often went beyond the minimum 12 hours required. The familiarity and trust between the MESA students and those they taught was invaluable. Their work often led to requests for additional learning from the people they introduced to computers and the Internet.

RESOURCES

@ MESA Student Participation Contract: <http://www2.ntia.doc.gov/files/cacconnectsmesastudentcontract.pdf>



HOW-TO: TEACH DIGITAL LITERACY TO ADULTS

Adult education has a long history in the United States, starting with the Lyceum Movement in the early 19th century and extending to today in programs sponsored by community colleges, public libraries, and other community-based organizations. Throughout this history, the goal has been the same: to provide adults with education that will help them become lifelong learners and productive members of society. With nearly 200 years of practice and research behind them, what can the practitioners and researchers in the field of adult education teach about digital literacy instruction? The following are key takeaways to keep in mind when designing a digital literacy training program for adults:

1. **Learning is social.** A successful digital literacy program will provide opportunities for learners to interact with one another. Hearing other learners' questions, having opportunities to share knowledge, and joint celebration of success are all important for keeping motivation high and solidifying knowledge.
2. **One-on-one help is essential.** Even though it's important to have space for social learning, it's equally important that adult learners are able to access individual help when they need it. Individual help makes it possible to more quickly get "unstuck" and keep going on new learning activities. In class environments, this means having aides that can work one-on-one with students during lessons; in labs it means having tutors available.
3. **Learning must be immediately relevant.** Adults are faced with more practical needs and competing priorities than younger learners, and will usually only prioritize learning when a skill is relevant to meeting a pressing need. In order to address this in digital literacy instruction, classes should be designed around learning how to complete tasks that are important to the learner and having tangible takeaways after completing a lesson.
4. **Feelings of self-efficacy and competence are important motivators.** Adult learners may sometimes feel embarrassed that they haven't kept up with technology and need basic digital literacy instruction. It's important to remind these learners that they are capable of learning and that they will eventually get the hang of technology. Try asking them about other things they have learned to do and remind them of how they were eventually able to master those skills.
5. **Adults face many personal barriers.** Low levels of basic English literacy; physical, cognitive, and age-related disabilities; lack of childcare or transportation; and less time for practice or homework are all additional barriers adults face when they are pursuing education. Successful digital literacy programs will learn which of these barriers affect their students and try to address as many of them as possible.
6. **Adult learners need continuity.** Oftentimes adults have educational goals, but not realistic plans for reaching them. To keep adult learners on track, they should have the help of instructors to develop written educational goals and plans. Learning materials, classes, and instructors should be designed for maximum continuity so that the learners can pick up where they left off if their learning is disrupted by the barriers they face.

Created by Samantha Becker, Research Project Manager for the U.S. IMPACT Study at the University of Washington Information School



HOW-TO: INCREASE CLASS ATTENDANCE

Bad weather, sick kids, car problems, or a new shift at work are all circumstances that can make it difficult for people to attend computer classes on a regular basis. Consider some of the following ideas to make it easier for people to attend your programs:

- ✦ Call to remind registrants when their class is scheduled. Calling gives participants a chance to ask questions and connect with someone in the program, in addition to being a helpful reminder.
- ✦ Schedule classes around the target audience's availability, such as times when children are in school, after work hours, or on weekends.
- ✦ Suggest that people bring friends or family members to the program: the social experience will reinforce their participation and expand the program audience.
- ✦ Provide training at strategic locations, i.e., locations that are comfortable and/or are already part of the target audience's routine, such as schools, libraries, stores, churches, and social service agencies.
- ✦ Structure training so that people can take a short sequence of classes rather than needing to commit to many weeks and hours in advance.
- ✦ Offer meals or snacks: people may not be getting regular meals or may arrive hungry, and providing food is a very basic way to show support.
- ✦ Provide transportation to the training location: programs have offered transportation tokens, van service, and even mobile labs that bring the training to the customer.
- ✦ Use neutral language such as "café" rather than "class" or "course" to describe what the class offers: many people have had negative experiences with formal schooling, or feel intimidated by school generally, and the more casual language will make them feel at ease.
- ✦ Offer childcare on site: if parents know their children are safe and occupied, they are more able to concentrate on learning.

“Our computer classes range from computer basics to more advanced. Student retention has remained high because we have moved our learners as an entire class. Moving our students through our program collectively has created a cohesive atmosphere, and enforced positive peer-to-peer relationships. Additionally, our students took initiative outside of the classroom, meeting in small groups to further develop computer skills. Computer class not only gave the students digital literacy skills: our classes, unbeknownst to learners, enabled them to practice team building, intrapersonal, and personal accountability skills.”

— Deaglan Daugherty,

Digital Inclusion Supervisor for Philadelphia FIGHT’s Critical Path Project



POPULATION Library staff

BARRIER Skills

STRATEGY Develop webinars to prepare staff to teach digital literacy courses

Texas State Library and Archives Commission (TSLAC) used BTOP funding to support 150 public computer centers, most of which were libraries. While the libraries planned to offer a range of digital literacy and workforce development training sessions, many librarians had never taught these subjects before. To help librarians become knowledgeable about the topics and feel confident in delivering training, TSLAC implemented several “train-the-trainer” activities. TSLAC held face-to-face training with some library staff and developed a series of webinars that librarians could access online at any time. Webinar topics included providing services to seniors and individuals with disabilities, supporting Latino communities through technology, and understanding state workforce resources. Although the webinars were developed for librarians, they were relevant to anyone conducting digital literacy training and have been accessed by programs across the country.

RESOURCES

Library staff training: <https://www.tsl.texas.gov/ld/teal/libresources.html>



POPULATION Digital literacy program participants of varying experience levels

BARRIER Skills

STRATEGY Train volunteers to enhance learning programs

University and community volunteers at Coppin State University’s *Coppin Heights-Rosemont Family Computer Center* helped with recruiting, training, and retaining new broadband users. The Center encouraged volunteers to focus on one particular skill area and assigned those volunteers to work in the same class. The longer they volunteered in a class, the more they learned and the more valuable they became, allowing the center to offer more advanced classes.

The volunteers in beginning-level computer classes were particularly important because they helped the instructor meet the individual needs of as many participants as possible. Class participants were likely to have a range of digital skills, and the instructor could easily end up spending a great deal of time troubleshooting the needs of less experienced participants. Volunteers helped intermediate-level students receive the same level of attention.

A photograph of a woman with dark curly hair and a young girl with braided hair. The woman is standing behind the girl, both looking at a computer monitor. The girl is pointing at the screen. The background is slightly blurred, showing a classroom or office setting with a red fire alarm pull station on the wall.

“Long ago we realized that simply providing access to technology was not enough. To bridge the digital divide, to be competitive and keep up with our changing economy, we must guide young people in using technology. They must be encouraged to engage in online environments and share their voice by creating digital media. YTech teaches technology, social media, and digital media skills as a catalyst for youth to share their voice and act in their communities. Armed with hard skills, access to technology, and a forum for expression and action, we can create the next generation of employable, engaged, skilled civic participants.”

— From the *Civic Voice Curriculum*

Chapter 6 Training: Curriculum & Relevant Content

“Curriculum” refers to the content and sequence of activities that teachers use to guide instruction. Learning to use computers and the Internet involves a very complex set of skills that build on one another, beginning with the most basic (e.g., keyboarding or using a mouse) and moving rapidly toward more complex skills (e.g., evaluating online information or creating digital media).

As shown by the examples in this section, digital literacy curricula encompass a wide variety of topics and ways of teaching. This Toolkit provides an introduction to some of the tools and curricula available, and highlights some strong examples, which build basic skills and enable students to use the skills to improve aspects of their lives, such as searching for a job or learning English.

NTIA has been collecting and organizing digital literacy curricula online at a portal, *DigitalLiteracy.gov*.¹⁵ In addition, as Internet devices and services continue to evolve, new curricula and resources are constantly being developed by programs throughout the world. Searching online remains one of the best ways to identify courses that meet specific goals.

Learners come with very different skill levels and interests, and instructors need to have a wide range of material and activities in their repertoires. When planning the curriculum for each class, think about the program’s equipment, the amount of time available, and, as always, the needs and interests of the people the program is trying to reach.

Resource:

@ A curriculum framework can be a useful tool when planning the course and the class activities needed to reach the end goal. A sample framework is included on page 61.

15 Additional curricula may also be found at *IMLS.gov* and many of the web sites referenced in this document.



HOW-TO: FIND DIGITAL LITERACY CURRICULUM ONLINE

Many digital literacy programs have made their materials available online at no cost to help similar programs save time and resources. Program organizers can customize these to the needs of the audience, and contribute new adaptations to the growing library of shared resources. Two good sources of instructor-led and self-guided digital literacy materials are:

DIGITALLITERACY.GOV

- ✦ Created through collaboration among federal agencies, www.DigitalLiteracy.gov is an online portal designed to share and enhance tools for learning computer and Internet skills. The Digital Literacy portal provides a central space where practitioners in service-oriented organizations—such as libraries, schools, community centers, community colleges, and workforce training centers—can share teaching materials and practices. The site also contains resources that people can use on their own to learn digital literacy skills and enhance their use of broadband.

COMMUNITIES CONNECT RESOURCE LIBRARY

- ✦ A project of the EdLab Group, the Communities Connect Network is a statewide coalition of public and private organizations working to make Washington State a leader in “digital inclusion.” Digital inclusion refers to the idea of all citizens having access and the skills to use computers and the Internet to benefit their lives. The Resource Library of <http://www.communitiesconnect.org> provides new learning technologies, useful best practices, and tools for running public computer centers.

Basic Digital Literacy

Participants in broadband adoption programs should leave the program knowing enough about how to use computers and the Internet that they can continue to explore and learn safely on their own. At a minimum, the training should cover computer basics (e.g., mouse, keyboard, and operating system), Internet basics (e.g., browsers, searching, evaluating information sources, and email), and Internet safety (e.g., scams, online privacy, and online identity).

If the broadband adoption program includes a free or low-cost computer or home Internet service, the training may also include information on how to purchase a computer or broadband service, download and install software, and maintain a home computer (particularly avoiding and responding to viruses and spyware).

The amount of time needed to achieve “digital literacy” depends on the goals of the training, the background of the learners, and how content is woven into skill-building instructional activities. Programs that aim for fluency or skills certifications generally require much more time than those that focus on acquiring basic skills. BTOP recipients have offered training in a variety of lengths (e.g., one hour, four hours, 15 hours, and even 100 hours), and have often experimented and adapted their course offerings to meet the needs of their target audience.



POPULATION Hospital employees

BARRIER Relevance

STRATEGY Partner with a hospital to train hospital staff

Connect Your Community, a project of *OneCommunity*, provided digital literacy training to hospital employees through partnerships with local hospitals in North Carolina and Ohio. WinstonNet of Winston-Salem, North Carolina partnered with Wake Forest Baptist Medical Center, and Cleveland Housing Network and Ashbury Senior Computer Community Center of Cleveland, Ohio partnered with University Hospitals. To increase the hospitals’ use of workplace online employee systems, reduce the need for paper paychecks, and increase retention through upward mobility within the organization, employees received 24 hours of digital literacy training that instructed on basic computer skills, purchasing and maintaining home computers, and evaluating broadband service options.

RESOURCES

- @ Staff training materials: <http://connectyourcommunity.org/connect-your-community-project-curriculum/>
- @ Professional development webinars: <http://connectyourcommunity.org/connect-your-community-project-curriculum/cyc-curriculum-electives/>



POPULATION Digital Literacy trainers and trainees

BARRIER Skills

STRATEGY Develop digital literacy training guides

The *Colorado State Library* found that one of the challenges of offering computer classes to the public, particularly those new to technology, is that they can be very nervous. This anxiety can inhibit learning and create a challenging environment for teaching. To address this, the Colorado State Library created Technology Trainer Competencies and Training Resources to increase trainer competence and confidence in technology assistance and instruction. These resources helped trainers of all levels to improve their skills, learn new training techniques, and become better equipped to answer questions about digital literacy topics.

RESOURCES

- @ Technology Trainer Competencies and Training Resources <http://create.coloradovirtuallibrary.org/tech-training-staff>
- @ Public Training Resources <http://create.coloradovirtuallibrary.org/tech-training-public>

Workforce Development

Many people are interested in learning computer skills and using the Internet to find employment. Workforce classes typically focus on one of the following areas: job search and applications, individual job skill development, and small business efficiency and success. For example, job seekers need to learn how to search and apply for jobs online. The Housing Authority of San Bernardino County developed a workforce skills course that helped individuals find employment. Other class participants are interested in developing computer-based job skills or pursuing a certification program. Still others want to start their own businesses and need to learn how the Internet can help. Axiom Technologies and Vermont Council for Rural Development's subrecipient, the Vermont Small Business Development Center, provided training to small business owners to build their businesses.



POPULATION Farmers and fishermen

BARRIER Relevance and Skills

STRATEGY Enable business efficiency and growth through customized technology training and mentoring

In rural Washington County, Maine, *Axiom Technologies* worked with farmers and fishermen to define the technology needs of their businesses. Axiom asked these individuals questions such as: Do you intend to expand? How do you track sales? How are you managing your business? Axiom assessed technology skills of participants and recommended appropriate classes to each business owner based on his or her goals and plans. Axiom provided technology classes including Basic Computer Skills, Microsoft Office, and QuickBooks. In some cases, Axiom found that the topics were more effectively taught when the examples were specific to the business. For example, Axiom provided tutors to teach QuickBooks on-site at the business office using real-life examples.

RESOURCES

- @ Business Training Assessment: http://www2.ntia.doc.gov/files/axiom_business_training_assessment.pdf
- @ Course Curriculum Outline: http://www2.ntia.doc.gov/files/axiom_course_curriculum_outline.pdf
- @ Learning Assessment: http://www2.ntia.doc.gov/files/axiom_individual_learning_assessment.pdf



POPULATION Low-income, public housing residents

BARRIER Skills

STRATEGY Provide digital literacy and workforce development training and services to help individuals find employment

The *Housing Authority of San Bernardino County* served a large rural area in southern California. The Housing Authority developed a specialized nine-week, skill-building curriculum to prepare residents to enter the workforce. The workforce skills curriculum was supplemented by a variety of stand-alone workshops to build digital literacy skills. Additionally, the Housing Authority partnered with the San Bernardino Employment Training Agency to provide instructors and ensure residents received high quality employment training. The Housing Authority monitored the success of training participants in finding employment and found that more than 200 individuals have become employed through these services.



HOW-TO: PROVIDE TRAINING IN MULTIPLE LANGUAGES

In order to best serve target populations, programs often need to provide computer training classes in languages other than English. Here are some ideas about how to make services multi-lingual:

- ✦ **Partner with organizations already serving immigrant and refugee communities.** These groups can help spread the word about program services, and can help find translators to provide high-quality translations. For example, the Idaho Commission for Libraries worked with the Idaho Office for Refugees to provide resources in 15 different languages, including Hmong and Somali. Technology Goes Home, a subrecipient of the City of Boston, worked with Boston Public School's Newcomers Center to reach immigrant and refugee families.
- ✦ **Promote program services through local ethnic news groups.** The University of Minnesota Broadband Access Program worked with the Minnesota Multicultural Media Consortium to coordinate outreach, engagement, and media through cultural events, technology and cultural reporting, the development of a website, radio spots, and advertising in minority media publications, including the Asian American Press, Insight News, the African News Journal, 11M'shale (an African community newspaper), Latino Midwest News, and The Circle (focused on Native American news and arts).
- ✦ **Assess the languages spoken by individuals in the service area, and explore how to provide services in those languages.** Monterey County Office of Education initially thought that the migrant workers in their target population primarily spoke Spanish. Upon further assessment, they discovered that some spoke only Oaxacan, an indigenous Mexican language. They began to offer training classes in Oaxacan. In one of Philadelphia's communities primarily composed of Bangladeshi immigrants, subrecipient Media Mobilizing Project was initially teaching ESL to women. As the ESL classes progressed, the women requested computer classes. Now, both Bangladeshi men and women are enrolled in computer classes, which are offered in their native language, Bangla. The computer classes became more popular than the initial ESL classes.
- ✦ **Configure computers for multiple languages.** The City and County of San Francisco configured their training and open access computers with language choices of Spanish, English, Chinese, Russian, Vietnamese, and Korean. This strategy let people learn to use a computer without also trying to master a new language.



POPULATION Small business owners

BARRIER Relevance and Skills

STRATEGY Provide an introduction to the basic skills needed to apply online tools to reaching business goals

The *Vermont Small Business Development Center* (VtSBDC), a subrecipient of the Vermont Council on Rural Development, focused on 24 “e-Vermont rural communities” as part of its BTOP project. Small business owners frequently expressed that they wanted to strengthen their basic computer skills, increase website and business network security, improve marketing through websites and social media, and improve office efficiency using online tools. VtSBDC responded to these requests by providing workshops, webinars, and one-on-one advising. It also developed an online e-Vermont Business Toolkit to provide an introduction for businesses interested in making better use of online tools. The online toolkit included modules such as Business Website Basics, Social Media Marketing, and Tracking the Impact of Online Tools. The toolkit also provided links to videos, presentations, and handouts in a format that was easy to follow and understand.

RESOURCES

@ e-Vermont Business Toolkit: <http://vtrural.org/programs/e-vermont/toolkit/business>



HOW-TO: USE REAL WORLD EXAMPLES

Teaching that incorporates “real world” activities is often called project-based learning. For some learners, this is far more effective than practicing skills in a vacuum.

To find out more, visit the Edutopia web site at <http://www.edutopia.org/project-based-learning>

Education

Educational goals are a strong driver of participation in digital literacy classes. High school students and other youth know that they need digital skills to pursue higher education and effectively participate in society. Organizations such as the City of New York and College Now developed curricula to prepare students for college and build life skills. In addition, CFY, the School Board of Miami-Dade County, and Cambridge Housing Authority developed a range of training courses and resources to help involve parents in their children's education, and encourage their academic achievement.



POPULATION Students and their families

BARRIER Skills

STRATEGY Recommend high-quality online educational resources to students and their families

CFY created *PowerMyLearning*, a free, web-based K-12 learning platform for students, educators, and parents. CFY carefully vetted the most compelling online educational activities—academic games, videos, interactive activities, and others—and made them easily accessible in one trusted place. PowerMyLearning also offered educators a set of tools for individualizing learning and supporting instruction in the classroom and beyond. It let families discover fun and stimulating activities to reinforce classroom learning and spark new interests. During CFY's training sessions, parents and students created accounts on <http://www.powermylearning.org>, received an overview of the platform's features and functions, and played interactive games to become familiar with the platform.

RESOURCES

- @ PowerMyLearning registration site: <http://powermylearning.com/register>
- @ Educator resources: <http://powermylearning.com/content/welcome-educators>



POPULATION Low-income parents of school-age youth

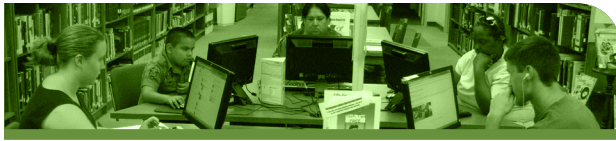
BARRIER Access and Availability, and Skills

STRATEGY Partner families with community engagement leaders to provide digital literacy training for parents

Developing the digital literacy of a school's parent population is critical to improving parents' engagement with their children's learning, increasing the use of the school district's online resources, and strengthening parent/school communications. Through a partnership of the Cleveland Housing Network, *OneCommunity*, and the Cleveland Metropolitan School District, digital literacy classes were embedded in the District's Parent University initiative. Parent-focused electives, which focused on using the District's parent portal, home instruction resources (including First in Math and Accelerated Reader), library offerings (Learning Express Library, World Book Online) and career and college planning (Naviance), were developed to complement the standard digital literacy curriculum. The training was funded by the District using Title I funds (federal awards to high-poverty schools), combined with other local and philanthropic support. Each of the parents received a refurbished computer as an incentive to complete the course. They were also given the opportunity to purchase Mobile Citizen's low-cost 4G broadband service.

RESOURCES

- @ Parent University brochure: <http://www.clevelandmetroschools.org/Page/2339>
- @ District's parent portal: <https://cleveland.schoolnet.com/>



POPULATION High school students and their families

BARRIER Relevance and Skills

STRATEGY Teach digital literacy through a focus on preparing for college and careers

Through their Connected Foundations program, the City of New York's *Department of Information Technology and Telecommunications (DoITT)* and its subrecipient, the Department of Education, created a course called "DIG/IT" (pronounced "dig it") that taught digital literacy as students explored college and career pathways and learned important life skills. DIG/IT was offered by more than 60 high schools that primarily served students at risk for dropping out or not graduating, older teenagers who were returning to complete their high school education, and students in schools that emphasized digital learning and college and career readiness. DIG/IT was designed for a "blended" environment that made use of both traditional classroom and online learning activities. The online platform for the course incorporated elements of social media and computer games in order to be more engaging and relevant for students and to bridge the way they already use technology in their daily lives with more formal, academic purposes. For example, students earned badges and points as they explored digital citizenship, college and career interests, financial literacy, and more. They shared their work online, where teachers and other students could provide feedback. Throughout the program, teachers received extensive professional development and support around blended learning.

At the conclusion of their DIG/IT experience, students participated in an Expo, where they demonstrated what they had learned to family members and friends. At the Expo, program partner CFY provided each student with a free netbook computer and the opportunity to sign up for discounted home high-speed Internet service. CFY provided families with support in accessing broadband services through multi-lingual assistance as well as navigating barriers during the broadband enrollment process. As of September 2012, nearly 3,000 students and family members had been served.

RESOURCES

@ Welcome to DIG/IT! Video Tutorial: <http://schools.nyc.gov/community/innovation/ConnectedFoundations/EDL/default.htm>



POPULATION Low-income parents and students

BARRIER Relevance and Skills

STRATEGY Provide tools to increase parental involvement in their child's education (i.e., free digital literacy training, low-cost computers, and a year of free broadband Internet service)

The *School Board of Miami-Dade County, Florida* provided one-hour digital literacy training for parents, a computer at a cost of \$25, and one year of free broadband Internet service to qualified low-income households. BTOP funding subsidized the remaining cost of the computer and the year of broadband Internet service. The digital literacy training classes were taught in English, Spanish, and Haitian-Creole depending on the school community. The training class included a basic overview of the computer, the software installed on it, Internet safety, and the district-wide resources available online, such as free tutorial software for students and the Parent Portal. The Parent Portal, an online resource, contained valuable student information for parents to monitor their child's attendance and academic progress in each class. Parents were required to apply to the program through the Parent Portal, and with guidance from the School Liaisons, often saw for the first time how the Portal worked.

RESOURCES

@ Parent portal: <http://www.dadeschools.net/parents.asp>

@ Class description: <http://link.dadeschools.net/>



HOW-TO: PROVIDE ONLINE EDUCATION TOOLS

Two free and self-guided online learning portals (one for adults and one for youth):

GCFLearnFree.org®

- ✦ *GCFLearnFree.org®* offers over 750 innovative online learning opportunities for free to anyone who wants to improve the technology, literacy, and math skills needed to be successful in both work and life. GCFLearnFree.org is a program of Goodwill Industries of Eastern NC, Inc.

PowerMyLearning

- ✦ *PowerMyLearning* is a free, web-based K-12 learning platform for students, educators, and parents. CFY carefully vets the most compelling free online educational activities (academic games, videos, and more) and collects them in one trusted place. PowerMyLearning also offers educators tools for individualizing learning and supporting instruction in the classroom and beyond. PowerMyLearning provides a location for families to discover fun and stimulating activities to reinforce classroom learning and spark new areas of interest.



POPULATION Parents of young children living in public housing

BARRIER Relevance

STRATEGY Encourage parents to read with their children to promote early literacy

The *Cambridge Housing Authority* operates three computer centers in its housing complexes in Cambridge, Massachusetts. While the centers offered a range of educational programs for school-aged children, they also offered programming for parents and young children. Parents ROCK (Reading on Computers with Kids) was a 25-week course for parents and their 4- to 7-year-old children that built literacy. Parents and children explored online literacy programs and other activities to develop children's reading comprehension skills.

RESOURCES

@ Parents ROCK: <http://www.cambridge-housing.org/resources/residentsvcs/children.asp>

Content & Media Generation

Broadband adoption programs are not limited to individuals who are unfamiliar with computers and the Internet and who need basic instruction. Many potential students, especially youth, are interested in developing advanced digital literacy skills, such as creating online content and media, and using the Internet as an outlet for creative expression. For example, some BTOP recipients, including ZeroDivide subrecipient Reel Grrls, EdLab Group Foundation subrecipient YMCA Seattle, Youth Policy Institute, and the City of Chicago, engaged young people in advanced online media classes. In addition, the University of Alaska Fairbanks provided content creation training to educators to help them use the Internet to improve and enhance lesson planning.



POPULATION Youth

BARRIER Relevance and Skills

STRATEGY Encourage youth to share their voices by creating digital media

An *EdLab Group* subrecipient, the Metrocenter YMCA in Seattle, Washington, implemented the *YTech program*, which built 21st century digital literacy skills through fun and engaging civic voice projects. YTech reached students from ages six to 21 through three classes. *Techreation* engaged children ages six to 12 in creating digital photography slide shows or videos exploring the role of exercise and healthy play. *Finding My Voice* gave young people ages 11 to 15 the opportunity to research a community issue important to them and present their thoughts in a digital medium. *Spark! Teen Dating Violence* guided teens (ages 15 to 21) to create public service announcements raising awareness of teen dating violence. In addition to the classes described above, YTech ran specialized civic voice projects that explored community issues.

YTech used a mobile lab and a 3G mobile hotspot, when needed, to teach the Civic Voice Curriculum at partner organizations. After completing training with YTech, partner organizations and students working on their own projects could also borrow equipment as needed.

RESOURCES

@ Curriculum guide: <http://youthdigitalmedia.com/curriculum/>



POPULATION Youth with disabilities

BARRIER Access and Availability, and Relevance

STRATEGY Hold disability justice media camp and make organizational changes to welcome youth with disabilities

Reel Grrls, a subrecipient of ZeroDivide's Generation ZD Digital Literacy Program, aimed to make the organization more accessible to people with disabilities. In addition to making its physical space more handicap-accessible through renovation and furnishing updates, Reel Grrls implemented a curriculum for teens with and without disabilities to learn media and digital literacy skills framed around disability justice.

Reel Grrls called their disability media camp "Dis This." The participants discussed how disabilities are represented in the media, learned how to use a video camera, and created their own videos. One example created during the camp was a *silent video poem* told through American Sign Language, animation, and images. As a result of the camp, the young people increased their awareness of disabilities and learned how to use computers and the Internet to express their thoughts creatively.

RESOURCES

@ Program description: <http://www.reelgrrls.org/programs>



POPULATION Youth

BARRIER Relevance and Skills

STRATEGY Integrate teaching of digital literacy skills into game design class

Youth Policy Institute's video game class was a new addition to its core curriculum for youth. After seeing all the students playing games online, the Curriculum Designer was inspired to ask, "If I could teach you to create your own game, would you want to?" The response was a resounding "Yes!" The class was focused on the theory of game design and guided the students through the lifecycle of a video game, including designing, creating, beta testing, modifying, de-bugging, and publishing original games. Not only did the students learn digital literacy skills, they gained an understanding of what people earn in the game design field, and how much education is required. The youth created and published their original game designs on *Sploder!*, a free online service.

RESOURCES

- @ Sample video game: <http://www.sploder.com/games/members/ypi03ethan/>
 - @ Sample video game: <http://www.sploder.com/games/members/ypinathan/>
 - @ Sample video game: <http://www.sploder.com/games/members/ypiefren/>
-



POPULATION Youth

BARRIER Perception and Skills

STRATEGY Engage youth in media-creating projects

Through the City of Chicago's *Smart Communities* project, the *Digital Youth Network* expanded a new media literacy program for middle school students into the five Smart Communities neighborhoods. The Digital Youth Network program was structured into two components: in-school media arts classes and after-school "pods." The mandatory school-day media classes ensured that all students were exposed to a broad set of skills, while the optional after-school pods let students build on the breadth of the formal classes and choose skills to explore in-depth. Digital Youth Network pods were production-oriented and helped students learn new skills through the process of creating media that reflected themselves and their surroundings.

RESOURCES

- @ After-school pods: <http://digitalyouthnetwork.org/#projects>
 - @ Example class production: <http://digitalyouthnetwork.org/project/dyn-tv/>
-



POPULATION Alaskan educators, professionals, and students in rural communities

BARRIER Access and Availability

STRATEGY Remove geographic distance and time as impediments to learning by enabling live streaming and an archive of video content

The (AKDEC), run by the *University of Alaska* (UA), promoted the “smart and efficient” use of broadband throughout Alaska. Challenges to conducting business in Alaska included travel costs and schedules, which often precluded organizations from hosting or sending people to conferences or lectures. Additionally, distance education was relied on throughout the state.

To make lessons and other educational content more widely available, AKDEC determined that teachers needed an easy-to-use digital recording platform. AKDEC looked into several solutions and selected the commercial product Mediasite by Sonic Foundry. The BTOP grant funded five portable media kits that included everything needed to “capture” a teacher’s presentation. Each one contained a heavy-duty computer, tripod, camera, presenter microphone, and clearly labeled cables for easy assembly. Using the tools in the Mediasite kits, teachers could record and synchronize high resolution video with slides, and capture content from any device, including laptops, tablets, and whiteboards. The kits also supported live video streaming in areas with sufficient broadband capability.

RESOURCES

- @ Mediasite kits: <https://akdec.alaska.edu/btop/university-of-alaska-video-conferencing-services/>
- @ Repository of recorded sessions: <http://mediasite.alaska.edu>



HOW-TO: INCREASE CONFIDENCE

“The impact of Digital Connectors (youth leadership and technology training paired with community service) is 80 percent empowerment and 20 percent skills. To help the youth see value in themselves, we structured the curriculum to build confidence and help the youth recognize their own abilities. Technology was just the vehicle.”

— David Saunier,
President of One Economy

Personal Interests & Enrichment

Aside from workforce development, education, and creative expression, individuals are often interested in learning about ways that the Internet can help them get ahead financially, maintain long-distance relationships, and pursue personal interests. Organizations such as the Eastern Upper Peninsula Intermediate School District in Michigan provided training on online financial services. Others, such as One Economy and Colorado State Library, provided guidance for accessing e-government services (e.g. filing taxes or applying for government benefits online). In addition, organizations, including the Menominee Tribe, provided training in web-based communication, such as Skype, to help their target population maintain relationships and increase communication. These courses provided training in areas that are readily applicable to everyday life and can help participants immediately see the positive impacts of Internet use.



POPULATION Non-adopters of broadband

BARRIER Skills

STRATEGY Partner with VITA (Volunteer Income Tax Assistance) sites

One Economy partnered with local VITA sites to develop do-it-yourself tax preparation guidance that was available for free at <http://myfreetaxes.com>. Tax preparation software required answering a series of questions and filling in boxes on a form. With encouragement and guidance, individuals who were familiar with computers and had email addresses learned to file their own taxes. Instructors asked people who were hesitant, “Do you use Facebook? If so, you can do this.” The project is now being managed by United Way.

RESOURCES

@ Online tax tutorials: <http://myfreetaxes.com/volunteers/>



POPULATION Unemployed and under-employed individuals

BARRIER Relevance and Skills

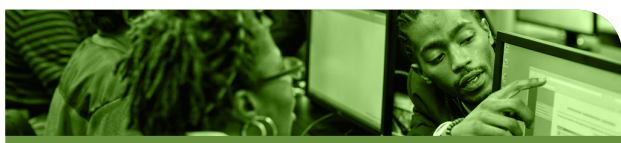
STRATEGY Provide customized, dedicated laptops for job seekers and state benefit applicants

After finding that 40 percent of library computer users were using the equipment to look for employment or build job skills, *Colorado State Library* (CSL) partnered with Colorado Rural Workforce to procure customized laptops for 50 libraries. The laptops were used as virtual workforce centers to upload resumes, apply for jobs, and take online courses. In expanding access to additional e-government resources, CSL arranged for additional library laptops dedicated to Colorado medical, food, and cash assistance programs. Users checked out the laptops, whose homepages are set to Colorado PEAK, the online system for benefit screening and applications. The dedicated laptops for job seekers and state benefit applicants met the needs of the community by providing easy access to e-government programs.

RESOURCES

@ Job search resources: <http://create.coloradovirtuallibrary.org/job-searching>

@ Basic tech resources: <http://create.coloradovirtuallibrary.org/tech-training-public>



POPULATION New broadband adopters

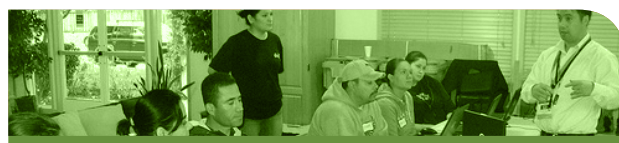
BARRIER Access and Availability, and Relevance

STRATEGY Develop webpage for potential broadband subscribers that can also be used during a training class

Through its Get Connected! project, the *California Emerging Technology Fund* (CETF) created the *Ordering Broadband* webpage to aid new subscribers choosing a broadband service. The page described the differences between DSL, cable, and wireless broadband service. It also provided a table comparing the broadband speeds of two common residential services in terms of uploading and downloading one 4x7 photo, one mp3 song, a music CD in mp3, and a standard movie. Individuals who visited the site also found a detailed list of questions that someone choosing a broadband service could ask a potential broadband provider.

RESOURCES

- @ Internet user's equipment checklist: <http://www.getconnectedtoday.com/getconnected/computer>
- @ Ordering broadband guide: <http://www.getconnectedtoday.com/getconnected/orderingbroadband>



POPULATION Active duty military and rural families

BARRIER Skills

STRATEGY Make Skype available in PCCs and teach families how to use it to stay in touch

Many members of the *Menominee Indian Nation* are active duty military, deployed around the world. Family members living on the reservation in rural Wisconsin previously had no way to contact their loved ones without incurring high telephone charges. To help the families contact their servicemen and women, the College of Menominee Nation provided Skype software on computers in its new BTOP-funded computer center. Instructors gave Skype workshops and provided private spaces for family conversations. Using Skype, families were able to see, not just hear, their loved ones. One mother told staff that Skype enabled her to see her son for the first time in more than a year. Staff used both traditional outreach (flyers) and new outreach (social media) to promote the availability of these services. Informal networks among community members were also key to raising awareness. The ability to communicate more easily eased the isolation of servicemen and women and supported the strong family relationships that are integral to Menominee culture.

RESOURCES

- @ Sample flyer: http://www.menominee.edu/images/web_workshop.jpg
- @ Facebook: <http://www.facebook.com/pages/Community-Technology-Center-of-the-College-of-Menominee-Nation/162871757136796?sk=info>



HOW-TO: REACH THE DEAF AND HARD OF HEARING

Project Endeavor, a project of *Communication Services for the Deaf, Inc. (CSD)*, developed an extensive *library of training videos* for deaf and hard-of-hearing adults. The library includes eight categories: Equipment, Technology, Access to Communication, Employment, Advocacy, Health, Finance, and General Information. All Project Endeavor educational materials and videos are available in American Sign Language (ASL) with voice narration and closed captions.

Project Endeavor's employment curriculum was developed by a licensed teacher for the deaf and content for the videos was developed by deaf/hard-of-hearing human services professionals. The materials and videos are used in classrooms and/or assigned as homework. In community settings, a video is often accompanied by a guest speaker or content expert who can answer questions and clarify information.



Although the rapid adoption of smartphones has significant parallels to patterns of online adoption and use, it is important to place smartphones in context. Smartphones typically complement people's online access tools; they do not serve as substitutes for getting online by traditional wireline means. Some 83 percent of Americans with smartphones also have broadband at home. However, smartphone-only users (the eight percent of the population who have a smartphone but no home broadband) have limited online usage patterns compared to people with broadband or broadband-plus-smartphones. This suggests that smartphones open the door to online access, but by themselves they do not open the door as widely as home broadband does.

Chapter 7 What's Next for Adoption and Access

The pace of change in technologies for accessing and using the Internet is truly unprecedented, with new devices, new services, and new applications introduced almost daily. The smartphone is an example of an access revolution that has taken place in only a few years. Smartphones are handheld mobile devices (such as the iPhone, Android device, or Windows phone) that enable wireless access to the Internet. By 2009, about 17 percent of Americans had smartphones. Since 2009, that percentage has shot up, with nearly half (45 percent) of Americans in late 2012 owning the devices. Along with smartphones, small, mobile, high-performance tablet computers like the iPad (launched in January 2010) have emerged, which function more like personal computers, offer bigger screens and keyboards than smartphones, and have been picked up by consumers even more quickly than the smartphone.

Contrast this with conditions in 2001, when Internet access was, for most Americans, stationary and slow—more than 90 percent of home Internet service was delivered via dial-up modems. In the years since then, the expansion of broadband and wireless networks has made access fast, portable, and, for those with broadband service at home, always on.¹⁶ Smartphones and tablets have added a new dimension in that “always on” becomes truly “always connected” as people stay in touch online wherever a wireless network is available.

The rapid growth of high-speed 4G services will make wireless access even more attractive to people who use portable devices, and drive the development of new applications that take advantage of the increase in capacity. At the same time, free public Wi-Fi “hotspots” are providing Internet access that is cheap and fast in settings as diverse as fast food restaurants and public libraries.

As broadband networks and devices become more powerful, flexible, and widespread, the advantages of being connected become more pronounced. Being connected will become more important to the connected population, and this will drive additional investments in tools that make online applications more valuable to people and profitable to innovators. With the Recovery Act’s Broadband Technology Opportunities Program, the deployment of broadband infrastructure into areas of the nation without adequate broadband services, and the establishment of innovative adoption programs such as the ones highlighted in this Toolkit accelerating broadband growth, the nation is on the path to meet President Obama’s goal of ensuring advanced wireless broadband for 98 percent of Americans by 2016.¹⁷

What can stakeholders and advocates do to help achieve the President’s goal as well as to continue to increase broadband adoption in their communities? Institutions working to close the digital divide will need to adapt rapidly and learn how to apply new broadband features and services in the communities they serve. They will need to share information and tools with similar organizations, create new partnerships, and leverage their resources to reach as many people as possible as cost-effectively as possible. They will need to experiment with business models that expand their role as intermediaries between their clients and institutions that stand to benefit from increased adoption, including broadband providers, and companies that expect their workers to come on board with fluent digital literacy skills. Stakeholders such as state, county, and local governments that are depending on e-government portals to deliver services and collect revenues will need to consider the cost of having a third of their citizens offline. Schools will find it difficult to communicate with parents and students who cannot afford, or see no reason, to go online. And federal resources, from veterans’ services to social security and disaster assistance, will have to be made available to citizens without Internet access, unless more is done to enable them to learn digital skills.

U.S. competitiveness, economic growth, and ultimately our Nation’s standard of living will rise as people obtain the information and tools necessary for success. Working together, we must continue to address these challenges and bring more Americans into the online world of the 21st century.

¹⁶ See, for example, NTIA reports on changes in Internet use and broadband adoption from 2000 to 2011 (including 2002, 2004, 2007, 2009, and 2010) at <http://www.ntia.doc.gov/data> (last visited Apr. 22, 2013).

¹⁷ The White House, Office of the Press Secretary, “Remarks by the President in State of Union Address” (2011). Available at <http://www.whitehouse.gov/the-press-office/2011/01/25/remarks-president-state-union-address>.

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Chapter 3 Planning Tool: Awareness & Outreach Planning Worksheet

When planning an awareness or outreach campaign, program organizers need to make key decisions such as identifying the audience, selecting tactics, and determining the medium and frequency of the messages. Each campaign should also have one key theme. A program can build on the theme as needed, but consistency will increase the strength of the campaign. A Planning Worksheet (as shown below) can be a useful guide. To use it, list the tactics (i.e., activities/materials) under consideration, and then use the information in the worksheet to decide which tactics best suit the objectives.

Campaign Planning Worksheet

Audience:

Demographics:

Preferred communication medium:

☐ Email

☐ TV/Radio

☐ Social Media

☐ Newspaper

☐ Direct Mail

☐ Events

☐ Word of Mouth

☐ Flyers

Preferred frequency:

Theme and message(s):

Activity/Material	Medium	Frequency	Reach	Cost

Note: Reach, cost, and audience preferences are key inputs to making awareness and outreach decisions. An ideal approach would meet the audience’s preference and be inexpensive for the number of people who will see/participate in the campaign. However, if a program cannot find an ideal method, program organizers need to weigh the relative advantages and disadvantages of the options. For example, the audience may prefer TV advertising but the cost may not be worth the reach. There may be less expensive ways to reach the audience, such as talk radio or community events.

Chapter 4 Planning Tool: Home Computer & Broadband Service Checklist

In planning programs that involve discounted broadband service and/or low-cost or subsidized computers, it is important to determine whether the program should partner with other companies and organizations. Since this decision can be complicated, program organizers should compare the resources necessary to run the program versus partnering with other community organizations.

Home Computer Program Analysis		
	Start a New Program	Form a Partnership
Source of Computers		
<input type="checkbox"/> Used computers		
<input type="checkbox"/> Large-scale donation		
<input type="checkbox"/> Individual donations		
Storage space		
<input type="checkbox"/> Rent storage space		
<input type="checkbox"/> Purchase storage space		
<input type="checkbox"/> Share storage space		
Staff		
<input type="checkbox"/> Hire staff		
<input type="checkbox"/> Provide volunteers		
Software Licenses		
<input type="checkbox"/> Purchase software		
<input type="checkbox"/> Use open source software		

Broadband Service Program Analysis		
	New Program	Partnership
<input type="checkbox"/> Subsidized service		
<input type="checkbox"/> Discounted service		
<input type="checkbox"/> Free service		

Chapter 5 Planning Tool: Training Planning & Delivery Checklist

Training planning and delivery depend a great deal on the population that the program serves and the specific needs/assets of the community. During planning, program organizers need to make decisions about the location to hold the training, what hardware and software are needed, staff requirements, curriculum, and other considerations specific to the community and the audience. The checklist below lists some of the key decisions in planning the training component of the program.

Training Planning & Delivery	
Location	Instructors
<input type="checkbox"/> Determine availability <ul style="list-style-type: none"><input type="checkbox"/> New space (rent/buy)<input type="checkbox"/> Existing space	<input type="checkbox"/> Identify special skills:
<input type="checkbox"/> Identify location <ul style="list-style-type: none"><input type="checkbox"/> Onsite (organization)<input type="checkbox"/> Partner organization<input type="checkbox"/> Mobile lab	<input type="checkbox"/> Hire full-time staff #: <ul style="list-style-type: none"><input type="checkbox"/> Job description<input type="checkbox"/> Interview<input type="checkbox"/> Signed contract<input type="checkbox"/> Schedule
<input type="checkbox"/> Research accessibility needs <ul style="list-style-type: none"><input type="checkbox"/> Accessible via public transportation<input type="checkbox"/> Handicap accessible	<input type="checkbox"/> Recruit volunteers #: <ul style="list-style-type: none"><input type="checkbox"/> Outreach<input type="checkbox"/> Signed contract<input type="checkbox"/> Schedule
<input type="checkbox"/> Establish capacity information <ul style="list-style-type: none"><input type="checkbox"/> People #:<input type="checkbox"/> Workstations #:	<input type="checkbox"/> Identify special skills:
<input type="checkbox"/> Confirm electrical, A/C capacity	
Hardware/Software	Outreach
<input type="checkbox"/> Acquire computers <ul style="list-style-type: none"><input type="checkbox"/> Laptops #:<input type="checkbox"/> Desktop computers #:<input type="checkbox"/> Tablets, other devices #:	<input type="checkbox"/> Develop web portal
<input type="checkbox"/> Obtain assistive technology	<input type="checkbox"/> Setup social media
<input type="checkbox"/> Purchase/connect additional hardware <ul style="list-style-type: none"><input type="checkbox"/> Printer/scanner #:<input type="checkbox"/> Speakers #:<input type="checkbox"/> Webcams #:	<input type="checkbox"/> Create outreach materials
<input type="checkbox"/> Purchase/install anti-virus software	
<input type="checkbox"/> Preload additional software <ul style="list-style-type: none"><input type="checkbox"/> Class-specific software<input type="checkbox"/> Skype<input type="checkbox"/> Multiple browsers/bookmarks	Additional Considerations
	<input type="checkbox"/> Provide childcare
	<input type="checkbox"/> Offer snack/meal
	<input type="checkbox"/> Provide multilingual support
	<input type="checkbox"/> Provide transportation
	<input type="checkbox"/> Schedule at times convenient for local audience

Chapter 6 Planning Tool: Curriculum & Relevant Content Framework

When planning curriculum for a class, think through the class activities and lessons with the overall goals in mind. What should students know and be able to do at the end of the course? The framework below will help to plan the course and the activities needed to reach the end goal.

Title:	
Description:	
Class length:	Number of sessions: Length of session:
Technology (Equipment/software):	
Prerequisite skills:	

Learning Goals:	Activities/Lessons:
After this course, students will know:	
Students will be able to:	
Students will have produced:	

SHARE RESOURCES FOR BROADBAND ADOPTION AND USE

NTIA invites all practitioners and organizations working to increase broadband adoption and digital literacy to submit resources, curricula, and strategies for success to NTIA.

To share resources or to ask a question,
send email to *bb_adoption_toolkit@ntia.doc.gov*.



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