Technology Empowerment for Students, Teachers and Low-Income Families

Best Practices in Innovation and Sustainability

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Best Practices in Technology Empowerment

Schools and communities across the country are rising to the challenge of putting information technology in the hands of students, teachers and families and providing training and applications that empower users to leverage technology to further lifelong learning and achievement.

With an eye towards scalable and sustainable program design, this white paper summarizes the work of six communities that have used computers to empower students, families and teachers. These are all communities with comprehensive programs that include computing, access, training, support and application and they all represent best practices in technology empowerment for students, teachers and low-income families.

- **Technology Goes Home** – Managed by the Boston Digital Bridge Foundation, this program, which operates both at community centers and in more than fifty Boston Public Schools, provides extensive training on PC basics and applications. Students attend with a parent or guardian and training groups aim to increase collaboration among all participants. On graduation, families can purchase a PC bundle with a zero-interest loan.
- **K12nects II** – With a focus on the low-income schools in the county and sponsored by the Fairfax County Public Schools, K12nects II offers families a preferred PC bundle with a zero-interest loan and encourages families to increase their financial literacy. A county-wide map makes it easy for families to sign up for computer training. One motivator for participation is getting home access to the schools' extensive web-based educational resource, a system-wide application that includes homework, collaboration groups and enrichment resources.

- **FamilyNet** – The School District of Philadelphia also offers parents and students access to grades, attendance and enrichment resources through a web-based application. They have complemented this program with a resource directory for community services, parent training, technical support and discounted PC purchase programs offering both new and refurbished PCs.

- **Computers for Youth** – Branching out nationally from its New York City home base, Computers for Youth works with schools to offer every student in the sixth grade a home learning system – a PC with a suite of software designed to support learning and school engagement. PCs are distributed at a half-day training session that students attend with parents or guardians.
- **One-to-One Laptop Program** - Gateway Regional School District's One-to-One Program allows parents to lease a laptop for students in grades seven through twelve. Combining this program with a strong technology base in the school achieves an effective one-to-one with a financially sustainable model. One-to-One computing is just one feature of the Gateway program. Technology integration starts early with laptop carts and take-home PC loans at the younger grades. Its strong focus on professional development has resulted in offering educators a Masters program in assessment in partnership with a local college.
- **Technology Placement Program** – Supporting all 250,000 teachers in New York State, the Technology Placement Program provides teachers with the opportunity to purchase a preferred PC bundle designed specifically to support technology integration and twenty-first century skills development. Extensive training options are available through 133 Teacher Centers located across the State.

Critical Elements of a Model Program

While each program has a different form and focus, successful programs address all or most of the following components:
- Communication and awareness campaign
- Value-enhanced PC bundles
- Affordable Internet access
- Applications that enrich learning
- Enhanced communication channels between school and home
- Financing options
- Training and Support
- Vouchers or Incentives
- Integrated Management

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Benefits of Scalable Technology Programs

Boston Digital Bridge Foundation started its program in 1999 and is now supporting 1,000 people a year. Computers for Youth launched their services in 1999 and is currently serving 4,600 people a year. Other programs are quite new, with the Technology Placement Program launched in fall of 2006 and K12nects II launched earlier that same year. Each program offers some form of inspiration and guidance for those looking to support teachers, students and families in using Information and Communication Technology (ICT) to empower students of all ages to be life-long learners and innovators for the twenty-first century.

As a whole, these programs:
- Support teachers in developing and teaching twenty-first century skills by integrating technology tools into curriculum
- Extend the learning environment for students and bridge the digital divide for low-income students and families
- Increase communication between teachers and parents and increase collaboration across the community
- Enable students to become "digital leaders" for their families
- Support financial literacy as well as digital literacy improvements
- Offer sustainable and scalable models for nonprofits and schools

Why Now Is the Time to for Technology Empowerment

In the first national study on the results of home computing on educational outcomes, Beltran, Das and Fairlie from the University of California Santa Cruz found that "teenagers who have access to a home computer are six to eight percentage points more likely to graduate from high school than teenagers without home computers."[1]

"The Report of the New Commission on the skills of the American Workforce, Tough Choices or Tough Times," notes that "While our relative position in the world's education league tables has continued its long slow decline, the structure of the global economy has continued to evolve. Every day, more and more of the work that people do ends up in a digitized form. From X-rays used for medical diagnostic purposes, to songs, movies, architectural drawings, technical papers, and novels, that work is saved on a hard disk and transmitted instantly over the Internet to someone near or far who makes use of it in an endless variety of ways. Because this is so, employers everywhere have access to a worldwide workforce composed of people who do not have to move to participate in work teams that are truly global."[2] Without an aggressive focus on developing twenty-first century skills, "an entire generation of kids will fail to make the grade in the global economy because they cannot think their way through abstract problems, work in teams, distinguish good information from bad or speak a language other than English."[3]

In the following pages, you'll find overviews of six innovative programs designed to increase digital literacy and develop twenty-first century skills. Each program is truly a Best Practice in innovation and sustainability and each offers structure for increasing the appropriate use of information technology for students of all ages.

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[1] D.O. Beltran, K.K. Das, R.W. Fairlie,"Are Computers Good for Children? The Effects of Home Computers on Educational Outcomes", April 2006.

[2] The Report of the New Commission on the skills of the American Workforce, Tough Choices or Tough Times, December 14, 2006, http://www.skillscommission.org/index.htm

[3] C. Wallis, S. Steptoe, "How to Bring Our Schools Out of the 20th Century," Time Magazine, December 10, 2006.

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Briefs on Leading Programs

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Program Name: Technology Goes Home

Current Deployment: Building on a strong set of school-based technology initiatives, the Boston Digital Bridge Foundation launched *Technology Goes Home* in 1999. It has been in continuous operation since then, and now trains about 1,000 people annually, 500 of whom take advantage of the program's PC purchase and loan offer. Technology Goes Home operates in three Boston neighborhood community centers and fifty of Boston's Public Schools. All training is designed for a student and parent or guardian to build skills together under the guidance of a certified instructor.

Executive Director: Edward DeMore
Program Director: Jackie Collins

Web site:
http://www.cityofboston.gov/bra/digitalbridge/index.html

Mission: Technology Goes Home is a technology training program serving inner-city families via neighborhood collaboratives and the Boston Public Schools. The program aims to:
- Foster collaboration and cooperation in the community
- Improve academic performance for children
- Enhance employment opportunities for adults
- Enhance relationships among parents, children and teachers

Approach: Technology Goes Home delivers training and enhances community through two sets of programs: one conducted at the child's school, Technology Goes Home @ School, and the other held at a community location, Technology Goes Home @ Community. Both share a similar curriculum and commitment to providing technology skills and equipment to students and families.   Since program participants are students with their parents or guardians, working in a school or community environment over time, the program looks to build relationships in addition to building skills.

- **Curriculum:** One of the hallmarks of the Technology Goes Home program is a commitment on rigorous curriculum. The @Community Program offers a 40-hour program; @School Programs are based on 25 hours of training. Teachers receive intensive training and support materials on three types of programs – a basic program for younger students and their families, an intermediate program for middle-school families and an advanced program for high school students. Each of the programs uses examples and projects that are aligned with both the student's grade level and the specific school-based curriculum. The intent in all cases is to ensure a base level of technology proficiency and to complement and extend in-school learning. Community-based programs use curricula and projects that complement life learning such as financial literacy and health access.

- **Value Added PC Bundle and Financing:** Microsoft®, Lexmark™, HiQ Computers and Intel® have made substantial donations enabling the production of a high-end low-cost computer especially designed for program participants. When students graduate, their families can purchase a new computer, software and printer with a three-year warranty for approximately $25 per month through a special Bank of America guaranteed loan program. Graduates of Technology Goes Home need only a Social Security Number or Tax ID to qualify for this zero-interest, zero-down-payment financing. The guaranteed loan program also offers a tailored financial literacy curriculum for participants that help them establish credit and teaches them to manage their finances.

- **Collaboration:** The Technology Goes Home programs have been designed to enhance relationships and promote collaboration.   All training is provided for a student with their parent or guardian. Many students and parents report that they especially enjoy the opportunity to spend time working together.   Teachers and parents also appreciate the opportunity to spend time together in the school. Parents often become more comfortable and more actively engaged in the school overall. The best of the community- and school-based sessions build the social relationships with the classes as well. Tech Goes Home also features a special collaboration with another Boston Digital Bridge Foundation Program – Tech Boston which provides advanced technology training to high school students. Teachers can request an intern from TechBoston to participate in and support their classes. Interns are matched to classes based on neighborhood and

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language skills so that a teacher with many Korean students in one class can get the support of a Korean-speaking intern.

- **Program Delivery Options:** Technology Goes Home @ Community focuses on family technology education. Parents and students work together with the guidance of a Program Coordinator. Neighborhood organizations at each location form Collaboratives and select a Lead Organization responsible for administering the program. Lead Organizations hire a Program Coordinator, coordinate regular meetings, select applicants and locate lab space. In the Technology Goes Home @ School Program, classes are normally offered by the child's teacher with a strong tie-in to current curriculum and projects such as selecting a high school or preparing for college. The @ School programs have grown aggressively over the past years with programs now operational in fifty of Boston's schools. Implementation of the 25 hours of training for @ School Programs and 40 hours for @ Community Programs varies with some teachers meeting once a week, some twice, some on Saturdays.   Schedules accommodate both the teachers and families.

Scaling and Expanding this Model: The Technology Goes Home programs have an excellent balance of centralized and distributed elements. At the core is curriculum, program management, common application processes, fund development, and the relationships with partners such as Intel®, HiQ Computing, HP® and Bank of America®. These core elements support specific programs in Neighborhood Centers and Boston Public Schools. The model has already been scaled to reach more schools and neighborhoods. Program materials are available online to help others who would like to model a program after Technology Goes Home. Go to the "Learn More About" boxes on their web site to download brochures (in English and Spanish), applications, lesson materials, PC purchase information and presentation materials on a range of topics in Digital Literacy.
http://www.cityofboston.gov/bra/digitalbridge/programs_programsupport.html#

Required Local Components: Strong program management and funding for teachers are critical elements of the Technology Goes Home program. While a strong partnership with the Public School is important, the initial program ran only in the community and still delivered strong results. In addition to infrastructure of program management, curriculum and teaching, a leadership focus on collaboration and rigorous standards has allowed the program to remain true to its original intent even as it scaled across Boston.

What makes _Technology Goes Home_ Unique? Technology Goes Home is more that a program about technology training; it is a program about relationships and collaboration. The program design fosters collaboration among community centers, between parents and teachers and between students and their parents. It also about achievement. With 25 to 40 hours of training and homework, Technology Goes Home requires participants to invest in the skills needed to use the PC effectively and to earn the opportunity to purchase a PC in the program.

Results: Since the programs inception in 1999, over 3,000 families have graduated from the program.
Over 10,000 people have participated in Technology Goes Home Programs. The program and its partners distribute over 500 computers per year. Surveys conducted by the Boston Digital Bridge Foundation found that:
- **87%** of participants report a significant increase in the connection to the community as a direct result of the program.
- **92%** of parents report their children's schoolwork improved significantly through involvement in Technology Goes Home.
- **95%** of the participants made significant improvements in their computer skills.
- **99%** of participants were very satisfied with the Technology Goes Home program.

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Program Name: K12nects II

Current Deployment: Launched in January, 2005 in the Fairfax County Public Schools (FCPS), Fairfax, VA, K12nects II currently supports eight schools in the Stuart Pyramid of Schools – schools with participation of 50% or greater in the National School Lunch Program.

Program Director: Cecelia Krill

Web site: http://www.fcps.edu/DIT/k12nectsII/index.html

Mission: K12nects II is a framework for teaching and learning in the digital age that integrates technology into curriculum and pedagogy to deepen learning, extend the learning environment, increase individualized learning, and engage parents more effectively in the schools. With the K12nects II program, Fairfax County Public Schools have developed a K-12 prototype for diverse, high poverty, and very mobile students in which technology is used to support educational best practices across a high-demand curriculum.

Approach: Leveraging a strong system-wide digital information and educational support system (FCPS 24/7) and teacher and student training, K12nects II builds a bridge to parents and families by providing no-interest loans and bundled PC offerings to low-income parents of children in the Stuart Pyramid schools in Fairfax County.

The key elements of the program are: a targeted PC purchase program for low-income buyers, no-interest loans for PCs, internet access, computer skills training, community resource directories, and integration with the Fairfax County Public Schools 24/7 web-based application for student learning and communication.

- **FCPS 24/7:** The Fairfax County Public School System uses the FCPS 24/7 system to complete student assessments, manage grades, communicate across the system, interact with parents, and provide extended learning through discussion groups and enrichment resources. The highly secure FCPS 24/7 system allows parents to monitor their children's work and students to directly access curriculum and enrichment tools 24/7 – any time of the day or night. To help families better understand these tools and support their children's education, schools offer FCPS 24/7 Night programs throughout the year. In these programs students and educators introduce parents to the FCPS application so that they are able to participate more directly in the extended learning and student-support activities.

- **PC Purchase Program:** The K12nects II manager invited existing vendors supporting the school district to provide computer offers that met the affordability of this low-income population. Three configurations are offered for students and parents and one additional model is offered for staff and teachers. Configurations were designed to provide an opening price point of $25/month. Each comes with an excellent two-year support program. A software bundle from Microsoft is provided as an option and that bundle leverages existing agreements between Microsoft and the School District.

- **No-Interest Loans for PCs:** A foundational element of this program is a progressive financing offer from Apple Federal Credit Union, a local credit union with deep roots in the community and schools. Apple Federal Credit Union created a special loan program offering customers, staff, students and parents the opportunity to open a checking account (with a minimum of $5.00) and apply for a zero-interest, 24-month loan for a new PC. Apple manages all processes and works with new clients to establish credit.

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- **Internet Access:** Through partnership with AOL, an active member of the Fairfax Education Foundation, qualified families receive free Internet access.

- **Community Resource Directory:** K12nects II fully leverages existing school and community resources to support the program. In that spirit, K12nects II provides new computer owners with a listing of training offered throughout the community. This listing includes adult education programs offered through the schools, training provided through the public libraries and a special six-week program offered through K12nects II that uses the latest techniques in teaching non-native-speaking students. With a pictorial curriculum, this program is accessible to residents who immigrate to Fairfax County from nearly one hundred different countries.

What Makes K12nects II Unique? The K12nects II model comprehensively addresses a range of issues and opportunities for schools serving low-income and diverse populations. The model encourages the creation and extension of community and business partnerships to directly tackle the issue of digital inclusion from all fronts—Parents, Teachers and Schools, Students, Community and Business. Easily replicable and adaptable to local needs, the K12nects II project serves as a low-cost model for connecting low income families.

Scaling and Expanding this Model: This program has been scaling up almost since its inception. Community resource directories and maps developed for the Stuart Pyramid Schools have been extended across the County and made available through the Technology at Home Web site. http://www.fcps.edu/DIT/techathome/index.html. The computer purchase program in partnership with the Apple Federal Credit Union is being expanded to additional areas of the County, with the goal of a County-wide program in the future.

In considering porting this program to other communities, initial program manager, Laura Reasoner Jones, recommends that communities first assess what they already have in place and leverage those assets in their own programs. Look for a partnership with local banks or credit unions to create financing programs; invite existing computer vendors to design a program specifically for this segment of the population; publicize existing free access programs; offer parents information on training; make school applications and programs available on line and invite parents to participant more fully in the school programs and systems.

FCPS 24/7 is based on the Black Board Academic Suite® which "enables institutions to embrace the full power of the Internet with access from any learning resource at any time in any place." http://www.blackboard.com/us/index.aspx

Required Local Components: Many of the elements of the FCPS could be replicated in other districts; all require local implementation and local leadership. While the electronic blackboard function, provided by the 24x7 systems is not fundamental to the parent training program, that framework does expand the virtual learning community in the Fairfax System.

Results: In the first eighteen months of program implementation, Fairfax County has seen the following results:
- Significant increase in use of FCPS 24/7 by participating schools both in instruction and in home use.
- An unintended but fortuitous outcome was that Spanish-speaking parents used the Spanish-language math program to learn mathematics themselves.
- More than 100 families and staff have purchased home computers through the interest-free loan program, and at least that many purchased home computers through the direct-buy program without the loan.
- Over 500 families participated in the evening classes and technology nights.

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Program Name: School District of Philadelphia's FamilyNet Program

Current Deployment: Launched in fall 2005 with a parent web site to allow parents online access their child's test score and broader access to SchoolNet's enrichment tools, this program was expanded to offer a system-wide PC purchase program in May 2006. A parents' ListServ, parent training, technical support and technology fairs were all introduced in 2006.

Family Technology Manager: Jay Cohen

Web site: www.sdp.delawarevalley.org

Mission: The School District of Philadelphia's (SDP) FamilyNet Program provides families with a wealth of technology and education related resources for students and their families. The goals of the program are broad:
- Increase home ownership of internet-connected PCs for families of SDP children
- Support families with optional training opportunities offered through school and community organizations
- Encourage families to connect directly with each other to collaborate and share information
- Provide families with information they need to make informed choices about technology
- Improve the educational environment in the home through online educational resources offered through the School District

Approach: Philadelphia's FamilyNet is a set of programs which together provide families with a range of resources to support their students' education and to increase their own engagement with the school and in the community. Those programs include access to grades and learning resources; opportunities to purchase computers, software and internet; and access to technical advice and other resources.

- **Access to grades and learning Resources (FamilyNet):** The School District of Philadelphia has implemented an information system that allows parents to easily view their children's attendance, grades and test data so that they can more actively help them improve their performance at school. In addition to allowing parents secure access to detailed information on performance, FamilyNet allows both the student and parent to access online programs and services that are keyed into curricula so students can use these resources to review, deepen and expand the skills and knowledge.

- **Purchasing a Computer:** Program Manager, Jay Cohen, has arranged with three area PC refurbishers and with two providers of new PCs to make PCs more available and affordable for low-income families. Through PC refurbishers Computers for Schools, Nonprofit Technology Resources and Team Children, families can purchase a used PC with Windows 2000 and (Open Source) Microsoft-compatible office software for between $150.00 and $175.00. Working with SDP PC vendors, Gateway and Apple, the School District has also made new PCs available to parents at employee pricing with desktop systems available for $549.00 and $694.00. The School District markets these programs to parents through flyers, seminars and technology fairs. Families purchase the computers directly from the PC vendors.

- **Internet Access:** Rather than promoting any specific Internet Access option, all material provided by the School District provides parents with simple definitions of available internet offers and furnishes them with the information they need to make an informed service choice.

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- **Access to Technical Advice and Other Resources:** The School District's family technology program integrates access to a range of community and school-based services designed to address training and technical support and to provide enhanced opportunities to communicate and connect. These include:

  - **Technical Advice and Training** are provided through local provider Nonprofit Technology Resources and through a telephone help line supported at Temple University.
  - **A Home and School Email Discussion Group** (Listserv) was initiated to facilitate communication on school and education-related topics.
  - **The Home and School Web Site** is designed to increase parent engagement and share information www.PhillyHSC.org
  - **Free Computer Courses for Parents** are offered through the Parent Leadership Academy at neighborhood centers.
  - **A Technology Expo and Computer Sale** provided families with the opportunity obtain information or purchase a new or used PC as well as learn more about FamilyNet and other online and community resources
  - **Introductory Seminars** are conducted regularly to provide parents with information on FamilyNet, PC programs, training, technical support, opening an email account and internet safety.

What Makes This Program Unique? While the Philadelphia program makes PCs and training available to families, two elements distinguish this program from others. First, the parent portal offered by the School District allows parents access to timely information and tools that directly support their children's education. Additionally, the focus of the program is one of providing families with the tools they need to directly support and extend learning for their children. By making PC and internet access options available, by making student information available, by creating a ListServ for parents, by providing training for parents, and by offering a family-focused portal, the FamilyNet program seeks to empower families to support their children.

Scaling and Expanding this Model: With low program management expenses, families ordering PC directly from vendors, and a strong system-wide commitment to the FamilyNet application, the critical elements needed for scaling are funding and resources for marketing and training. Program enhancements planned for this year will expand marketing and increase the availability of neighborhood training for parents.

Information on the SchoolNet application is available at http://www.schoolnet.com/. This site also contains a case study of the School District of Philadelphia implementation at http://www.schoolnet.com/success/index.aspx?id=3.

Required Local Components: The beauty of the SDP program is the way that the School District has integrated a number of simple components and leveraged the SDP "channel" to reach 90,000 families. A strong program manager with connections in the community is the most important local component. Funding is needed to get marketing (flyers) and to nurture existing community and school-based programs.

Results: Given that these programs have been introduced and expanded over the past eighteen months, initial results are significant. In a district with 200,000 students and 90,000 families, 85 % of whom are on National School Lunch Program, over 10,000 families have registered to get their children's grades online via the FamilyNet portal. In just the first 10 months of the PC program over 2,000 refurbished computers and additional new computers have been purchased by area families. Eight hundred families are using the ListServ to get information about the schools.

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Program Name: Computers for Youth (CFY)

Current Deployment: In the 2005-06 school year, CFY distributed computer-based *home learning centers* to more than 2,300 families and trained more than 4,600 students, parents and teachers from school communities in New York City and Philadelphia. Since the program's inception in 1999, CFY has served 10,000 families.

Director/CEO: Elisabeth Stock

Web site: www.cfy.org

Mission: Computer for Youth's mission is to improve the home learning environment of middle-school children from low-income families.

Approach: CFY works with schools and families to provide teacher, student and family training and to offer every student in a sixth grade class the opportunity to take a computer-based *home learning center* home. CFY's all-inclusive program supports parents as learning partners, connects classroom learning with the home, and creates educational opportunities for the entire family. The approach includes three elements:

- ▪ *Computers Designed as Home Learning Centers.* CFY partners with public schools in low-income communities to offer all sixth grade families a computer-based *home learning center* with educational software, Internet access and web content. Participating families attend a half-day training workshop on the *home learning center* that they then take home. Workshops are held at the school and are well attended. In schools that draw fewer than fifteen families to PTA meetings, CFY's Saturday workshops draw more than one hundred.

- ▪ *Parent Workshops and Teacher Training.* CFY coordinates additional workshops to help parents become better learning partners. They also enhance the home-school connection by working with teachers to increase their understanding of literacy practices in students' homes.
- ▪ *Educational Software for the Home.* CFY helps improve the quality of home-based educational software by identifying the best new products and then increasing their visibility among school districts, investors and others in the industry.

CFY's focus on the sixth grade is purposeful and powerful. The middle-school years are when children become less engaged with academics and begin to push away from their families. They are the years when parents become less involved in their children's learning because they view their children as more grown up and they feel less capable of helping with increasingly complex homework assignments. Finally, and most unfortunately, they are the years with the steepest drop in efforts to involve families. CFY's program targets sixth grade – the earliest grade in middle-school – so that they can intervene at the very time that children's disengagement from family and school begins.

What Makes Computers for Youth Unique? The Computers for Youth model comprehensively addresses a range of issues and opportunities for schools serving low-income populations. The model offers families one integrated package of products and services (e.g., equipment, training, software, support), and incorporates professional development for teachers to increase the alignment with curriculum and the probability that the *home learning centers* will be used and used effectively. The program structure improves the home learning environment of an entire sixth grade class – and, over time, the home learning environment of all the classes in the school community. This approach and the mandate for parental participation frequently drives higher rates of parent engagement than is typical for these schools.

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Scaling and Expanding this Model: CFY is now expanding its programs more broadly to underserved populations in the US by building local CFY offices in additional cities and by supporting schools or nonprofits as Affiliate Partners. Computers for Youth currently has local offices in New York City and Philadelphia with plans to be operating in five cities by 2010.

Computers for Youth is also developing an Affiliate program to enable school districts and nonprofits to implement home-learning programs in their communities. Through the Affiliate Network, CFY will provide the resources necessary for Affiliates to replicate essential components of CFY's programs. The CFY Affiliate program requires annual membership dues and fees for products and services rendered. Examples of products and services that are made available to Affiliates are:

- *Educational Software Package* – CFY has assembled an enriched bundle of software that supports home learning. This software is reviewed by "Ed Tech" executives from some of the most prominent US school districts and tested by students and their families. CFY has received approval from many of their current vendors and can now offer affiliates the privilege to replicate the CFY software image on computers that will be placed in the homes of low-income families.
- *Train-the-Trainer Package*– In the spring of 2007, CFY will begin offering affiliates a Train-the-Trainer Package for conducting Saturday Family Training Sessions – the sessions where students and parents receive training on the computer they then take home. The package will include instructional curriculum, professional development for trainers and guidelines for both setting up the training sessions in a school and recruiting families. The package will include direction on the complex logistics of deploying more than 100 home computers per day per site. CFY will also begin offering affiliates Train-the-Trainer packages for additional parent training and teacher-professional development.

Required Local Components: By participating in CFY's Affiliate Network, Districts can implement various elements of the CFY program according to need and affordability. For the whole program supporting a sixth-grade class, organizations need a strong school partnership, a sustainable structure that will allow ongoing training and support for progressive classes of sixth-grade students. In addition to CFY's fees, sponsoring organizations need to cover costs for PCs (new or used), software, trainers, teacher training, technical support and program administration. In each city, the estimated cost of CFY's all inclusive package decreases as the program grows to serve more and more families. In New York City, where CFY is now reaching more than 2,000 families each year, their cost per family is approximately $400. This figure includes the cost of the CFY computer, the family workshops, logistics, technical support, research and evaluation, and overhead.

Results:
Survey responses from students, parents, and teachers also demonstrate CFY's positive influence.
- More than **80%** of participating students indicate that having a CFY computer-based *home learning center* helped them do better in school.
- More than **90%** of participating parents indicate that the CFY program increases their confidence that they can help their children learn.
- **71%** of parents indicate that they use their CFY *home learning centers* to help their children with homework assignments.
- A majority of participating teachers report improvements in their students' research, collaboration and keyboard skills.

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Program Name: Gateway Regional School District One-to-One and Mass 1-to-1

Current Deployment: Supporting seven rural towns in western Massachusetts, the Gateway Regional School District (GRSD) created a program that uses multi-year leasing and purchase options to equip students in grades seven through twelve with a laptop computer. Middle and high-school students also have access to laptops in school with the option to take then home for projects. Teacher professional development is comprehensive. The creators of this program have started a new nonprofit, Mass One-to-One, to support other Districts looking to replicate this model.

Superintendent: Dr. David Hopson
Technology Director: Paul Facteau

Web site: http://www.grsd.org/1to1/

Mission: The Gateway Regional School District has implemented a self-sustaining one-to-one laptop initiative as part of the school district's technology program. The program is based on the following principles:
- Students utilize technology best when they have direct access to it. Going to the lab to use the computer at a scheduled time does not allow for dynamic "teachable moments."
- Technology only breaks down the barriers of the classroom when every student has access to it. We need to avoid promulgating the digital divide.
- Education is a lifelong process and should not stop when the last school bell rings. Technology needs to serve the needs of students before school, during school and at home.
- Teachers need training and support to utilize technology in the classroom. Our students are digital natives; many of us are digital immigrants. We need to help teachers learn to use the tool to its fullest capacity. This means far more that visiting web sites and sending IM's. It means changing how we think, design, communicate, control workflow and evaluate what our students create.

Approach: The Gateway Regional School District (GRSD) modeled its PC program on the program they used to help students lease musical instruments. Key program elements include: teacher training and support, an innovative financing model to lease laptops, curriculum integration, a strong technical support structure and the extension of school assets to the community.

- **Teacher Training and Support:** The District provides each teacher with a laptop and "extensive professional development opportunities to help teachers integrate laptop technology into their curriculum, encouraging students to learn from the laptop both in and out of the classroom."[1] Program Director, Paul Facteau has also worked with the Westfield State College to develop a series of graduate-level courses aimed at using laptop technology to assess students and to evaluate programs. Teachers can work towards a Master in Education right on the GRSD campus. "Teachers use on-line calendars, post curriculum and homework on their course web sites and communicate with students and other teachers electronically."[1]

- **Innovative Financing Model:** The Gateway Regional School District uses shared wireless laptop carts for students in Grades three through six, deployed in the schools with a ratio of one computer for every two students. A low cost thirty-six month lease program helps families purchase laptops for students in grades seven through twelve. The District designed the lease program to include the PC, warranty, insurance and pre-loaded software with monthly payments of less than $35.00 a month. The District currently uses the Apple® laptop PC with open-source software and a few specific educational packages including NoteTaker™. The lease has a $1.00-buy-out option and is designed so that students can get a new PC as they enter their sophomore year of high school. "Students who qualify for free or reduced lunch pay one-quarter or one-half, respectively, of the monthly fee, a cost that is offset by funds appropriated in the district technology budget. Additionally, the school owns laptops for students to use during school hours if their families have chosen not to participate."[1]

1

[1] ,H. Barondess, T. Plati, and D.Stein, Building Blocks Promising Practice, The Building Blocks Initiative for Standards Based Reform, Mass Insight.

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- **Curriculum:** The District encourages teachers to integrate technology into their curricula. The District provides workshops and templates for web site design and uses a content management system for lesson plans. An indication of the District's commitment to using technology to support education is the redefinition of the job description for "Curriculum Supervisor" to "Curriculum and Technology Integration."

- **Technical Support:** GRSD has an extensive technical support program for teacher and student laptops. A single manager works with a staff of eight to ten students to provide a help desk for equipment and software. Regular seminars are provided for the teens and these tech-savvy teens help to train others. Additionally, the school's contract with Apple® computer includes Depot Service for quick turn around repairs, replacements and re-imaging, if necessary.

- **Extending School Assets to the Community:** Community support and partnership are central to the Gateway initiative. Families have shown their support for the program and for their children by subscribing to the laptop lease program with a participation rate of nearly 60%. The GRSD has structured its programs to support families and students at home by providing free dial-up access, family training and by making it clear that the laptops are for family use, not just for students.

    o **Free Dialup Access through the Schools:** In rural western Massachusetts, only two of the seven communities in the Gateway region are served by any broadband Internet Service Provider. While the schools all have wireless broadband connections on campus, GRSD has expanded its network to allow students and their families to access the District's modem pool to get free dial-up service. While home broadband access is still a community goal, the no-cost local dial-up offer does help families connect.

    o **Family Computing and Training:** The District leases the laptops to families, not to students. Families are encouraged to use the laptop outside of school. The District offers a series of workshops for students and parents to help families understand everything from PC basics and networking to digital photography and video editing.

What Makes Gateway's Program Unique? The Gateway District uses a "public private partnership" to make one-to-one computing available and sustainable. The foundation of the Gateway program is excellent support for teachers: teacher laptops, professional development, and extensive technical support. Integrated curriculum and laptop labs available for students in grades four through six build a foundation and value for students. The collaboration with families expands at grade seven by offering an attractive family lease program, dial-up access and family training. The choice to lease a laptop and the responsibility for the PC and payments lies with the family.

Scaling and Expanding this Model: The GRSD program continues to expand to keep pace with the opportunities posed by computers and the internet. Teacher professional development and open source tools are also a mainstay of both program maintenance and expansion. In response to inquires from other Districts, Paul Facteau and the Gateway Regional School District School Committee have created Mass 1-to-1 (http://mass1to1.org), an independent educational foundation, to provide consulting and leasing for other Districts.

Required Local Components: The laptop lease program is just one component of the Gateway Regional School District's technology initiative. Since one-to-one programs assume a high level of technology integration, strong professional development and curriculum integration are a required foundation in any program. Local technical support and a strong wireless network are also needed. The laptop lease program requires the District to manage vendor contracts, insurance and monthly collections – services that Mass 1-to-1 will provide if desired.

Results:
Piloted in 2000 and expanded in the following years, the Gateway Regional School District's one-to-one program is now serving 375 of the 600 students in grades 7-12. According to program director, Paul Facteau, "Parent feedback has been off the charts." Teachers are very appreciative of the program support and the opportunities for professional development. Student attendance among students with laptops appears to be 4% higher than those without laptops. This is a program that expands every year, building on strong community collaboration and commitment to educating children with skills for the 21st century.

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Program Name: New York State Teachers' Technology Placement Program

Current Deployment: Introduced in October, 2006, the Technology Placement Program is available to all 250,000 teachers in the state of New York. Professional development is offered through over 133 New York State Teacher Resource and Computer Training Centers.

Program Director: Stan Silverman
Program Manager: Debbie Costello

Web site: http://www.nytpp.org/   www.teachercenters.org

Mission: The New York State Teacher Resource and Computer Training Centers were established by the State Legislation in 1984 to provide systematic, ongoing professional education services to the State's teachers. The Technology Placement Program (TPP) supports those same teachers with a bundle of integrated professional development and an optional PC purchase program.

Approach: To prepare students to compete in a global society, teachers need both the tools of the 21st century and the professional development to use those tools. This program, developed by the New York Institute of Technology, the New York State Teachers Resource and Computer Training Centers and hardware and software vendors, provides teachers with a suite of professional development programs and a highly discounted PC offer.

- **Professional Development:** The New York State Teacher Centers already provide educators with a suite of courses. As part of the Technology Placement Program, the centers offer training on software and applications that have been selected specifically to support New York State teachers' use of technology with a strong focus on using those tools as an integral element of teaching. The Centers use the Intel® Teach to the Future curriculum to provide a foundation in 21st century skills. Teachers learn from other teachers how, when and where to incorporate technology into their lesson plans, with a focus on developing students' higher-order thinking skills. They experience new approaches to create assessment tools and align lessons with educational learning goals and state and national standards. Training covers the Microsoft® Office Productivity Suite and Adobe® Classroom bundle and the Thinkfinity application from the Verizon Foundation. With the mission and history of the Teacher Centers focused on professional development for teachers, all training is provided in the context of it's applicability to educational processes and outcomes.

- **Value added PC Bundle:** TPP offers teachers three PC bundles that have been vetted by a team of educators and developed based on three usage models. The usage models have snappy labels for hardware and software configurations for teachers that are "Getting Started," "Getting Ahead," and "Getting Creative." The program offers Dell® PCs with the Microsoft® Office Student and Teacher Edition. Two of the packages also include the Adobe® Digital Classroom bundle. The "Getting Started" system is desk top with all the basics you'd expect. The "Getting Ahead" bundle has tools for creating PDF files and podcasts and for photo editing. The "Getting Creative" bundle has all of the tools for multi-media presentations with video editing and extensive image management tools. All systems include three years of next-business-day onsite support from Dell®. System specifications and pricing is available on at www.nytpp.org.

- **Curriculum:** A curriculum cornerstone of the New York program is the use of the Thinkfinity application from the Verizon Foundation. http://www.mped.org/home.aspx Previously called MarcoPolo, the Thinkfinity application "combines authoritative, standards-based K-12 educational content and robust professional development with research and evidence-based resources and practices for literacy across the lifespan." The New York Institute of Technology has mapped all MarcoPolo resources to state standards so that teachers can easily access enrichment materials that are aligned with the state curriculum standards. http://www.nyiteez.org/MarcoPoloNY/

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- **Marketing and Communications:**
    Realize your potential.
    And help your students realize theirs.
    Learn. Share. Grow.

Collaborating vendors and agencies developed a marketing template and campaign told teachers about the TPP program. In addition to the website, the TPP team provided Teacher Centers with templates that they can use in their mailings and communications plan. With 133 Centers reaching out to 250,000 teachers, this campaign effectively combines centralized program development with highly distributed delivery and communication vehicles.

What makes the Technology Placement Program Unique?
The foundation of the New York State Technology Placement Program is the Teacher Centers and their longstanding commitment to teacher support and professional development. While a bundled PC package for home use is part of the TPP offer, the emphasis is on the bundled software and applications and the associated professional development and training.

Scaling and Expanding this Model: With continued focus on affordability and applicability, program enhancements will strive to create public/private partnerships that increase incentives for teachers to invest in technology. The TPP program is currently being expanded to school employees other than teachers. A student version of the program is under consideration.

Required Local Components: The Teacher Centers and the staff at New York Institute of Technology provided a strong platform for both program design and ongoing implementation. This function could be implemented in other ways, but it is critical to implement the program in alignment with state educational standards and teachers' needed and to deliver the program in partnership with a trusted source like the schools or Teacher Centers. The New York program also benefited from an excellent marketing program that allowed program designers to get the word out to teachers and that "branded" the program for on-going follow up.

Results: According to Program Director, Stan Silverman, initial results on this new program are very positive.   Teachers are appreciative of the program and of the work done to create a package that is specifically designed for their needs. In the first ten weeks of the program, the TPP web site had 16,000 unique visits. Enrollment in courses offered by the Teacher Centers has been above average. The team expects PC orders to increase after some changes are made to better describe the elements of the PC bundle and the associated value of each component.

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Critical Program Elements

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Program Element	Boston Digital Bridge Foundation's Technology Goes Home	Fairfax County Public Schools' K12nects II	School District of Philadelphia's FamilyNet PC Programs
Communication and awareness campaign	Each participating organization makes a personal commitment to identify students and enroll them in the program. Brochures, flyers and introductory presentations are available on line to support their efforts.	In addition to flyers at the schools, families learn about the schools' 24x7 web-based educational enrichment applications and PC programs at District-sponsored 24x7 Nights and a Computer Fair.	The School District sponsored seminars at schools, offered a technology fair and distributed comprehensive program flyers to 180,000 students.
Value-enhanced PC bundles	Through the leadership of local PC vendor, HiQ, and other partners, Boston defined a high-value PC bundle that includes Microsoft Office Professional and three-year warranty.	Working with Dell® Computers, K12nects II developed four configurations for students, families and teachers. Microsoft® Office was provided at a discount through and extension of the School District license.	The FamilyNet flyer offers parents five PC options. Current options include three refurbished PCs and two new PCs. The flyer also includes information on price, warranty and software configuration as well as information on PC pick up or delivery options.
Affordable Internet Service	While a internet access is not part of the Technology Goes Home program, the Boston Digital Bridge Foundation is a stakeholder in Boston's planning effort for a future citywide wireless network.	K12nectII provides free dial up access through a grant from partner and supporter AOL.	School District materials provide parents with educational and ordering information on internet offers. Where free dialup or wireless broadband offers are available, those are highlighted.
Applications that enrich learning	Technology Goes Home provides teachers with three standard programs: a Basic Computer Skills syllabus for students in grades 4 and 5, a more advanced program for middle school families, and a high school program that integrates information on college and career exploration. Teachers are encouraged to use the program to integrate resources that align with their specific curriculum and classroom teaching or community activities.	Based on the Blackboard System, the FCPS 24x7 web-based application is used extensively in the school to individualize learning, measure progress and offer enrichment. Remote access for parents and students allows them to be connected to school resources 24x7 – day and night. Home access to the 24x7 system is a strong motivator for families to get home PCs.	SchoolNet is used extensively in the school to individualize learning, measure progress and provide enrichment. The extension of this application to the home via FamilyNet provides parents with a strong set of resources for their children. Parents can monitor their children's grades and attendance and access curriculum-aligned enrichment resources.
Enhanced communication channels between school & home	Technology Goes Home deepens relationships within families and communities; those relationships form the basis for enhanced communication. Participating families are more engaged in their school going forward and much more likely to bring concerns or ideas to teachers and administrators.	The 24x7 application provides a forum for extensive student, teacher and parent interaction including chat groups, collaboration tools, progress reports and email alerts. Students participate in project-related communication groups with some students belonging to more than a dozen groups for class, sports and clubs.	The Home and School portal is designed specifically to provide parents with ways to connect to the school and to support their children. The School District also manages a ListServ to enhance communication between schools and families and between families.

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Program Element	Boston Digital Bridge Foundation's Technology Goes Home	Fairfax County Public Schools' K12nects II	School District of Philadelphia's FamilyNet PC Programs
Financing options	The Bank of America offers all graduates of Technology Goes Home the opportunity to get a loan for the PC with no down payment and no interest. Participants need only provide their Social Security Number. Additionally, the bank offers financial literacy training for interested consumers.	Apple Federal Credit Union offers low income families a micro loan specifically for K12nects II PC purchases. In addition to the no-down-payment, zero-interest loan, bank staff assists new clients to open checking accounts and establish credit.	No financing is offered at this time. Since the District program includes both new and refurbished PCs, low income buys do have a range of price points to consider.
Training and Support	Technology training is the foundation of the Technology Goes Home program. 25-40 hours of rigorous training is required for both students and a parent or guardian. Interns from a companion program, TechBoston, are available to TGH teachers to support classes. Teachers can request interns with specific languages or skills that complement their own knowledge. The TGH PC configuration includes a 3-year warranty.	The School District leverages area programs by producing a resource directory that includes training offered through schools, libraries and community centers and by mapping out available free-access areas. The PC bundle provided by Dell was also designed to have a two-year, business-level technical support offer bundled into the base price.	The School District helps families gain access to a range of niche programs offered through the schools and in the community. In addition to seminars on PC basics at the schools, technical support is available through a local nonprofit and a telephone help line at a local University. Parent education is offered in the community the Parent Leadership Academy.
Vouchers or Incentives	Graduates automatically qualify for a zero-down-payment, zero-interest loan on an excellent PC, with software and warranty. All graduates receive a certificate from the Mayor at graduation celebration.	Participants may apply for a zero-down-payment zero-interest loan on an excellent PC. Discounted software is also available.	No incentives or vouchers are offered at this time.
Integrated Management	A strong central team coordinates the program, manages vendor and partner relationships and leads in fund development. This central team works in partnership with program managers and teachers in Neighborhood Centers and Schools.	Managed from the Fairfax County Public Schools Cluster III Administration Offices, this program is staffed with less than one headcount. However, the program leverages school, community and business partner resources to deliver a broad set of services and educational information.	Managed from the Instructional Technology Department under the School District of Philadelphia's CIO, this program is managed with less than one head count. In addition to showcasing school and community programs, the School District also advocates and markets new programs designed to support families.

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Program Element	Computer for Youth	Gateway Regional School District's One-to-one Laptop Program	New York State Technology Placement Program (TPP)
Communication and awareness campaign	Computers for Youth programs are implemented in partnership with specific schools and principals. Since programs are offered ubiquitously to an entire sixth grade, communication is distributed directly to all families through the school system and teachers.	Gateway's one-to-one program is made available to seventh grade students, many of whom have been using PCs in school and, through the loan program, at home, for years. Mailings through school, flyers and a web site all provide information. School meetings invite parents in the program to talk with others about program benefits.	Starting the program with New York City press conference and a professionally designed marketing campaign, the Technology Placement Program has an excellent communications program. By "branding" the program and making templates available to Teacher Centers, on-going communication maintains the theme and look of the program.
Value-enhanced PC bundles	Computers for Youth puts emphasis on a carefully selected educational software bundle targeted for sixth-grade students and aligned with curriculum.	The GRSD program features an Apple® laptop preloaded with an image provided through the school that includes a variety of teacher-selected educational and productivity software packages geared toward an immersed 1-to-1 laptop learning environment.	Starting with the Dell® business class machines, TPP designed three configurations: "Getting Started," "Getting Ahead," and "Getting Creative." Bundled software includes Microsoft® Office and Adobe® Digital Classroom.
Affordable Internet Service	Free dial up internet access for one-year provided through a grant from AOL.	The GRSD offers wireless broadband in all school facilities. For home access in this rural area, the District has opened their modem pools to provide dial-up access for students at no cost.	There is no internet offer in this program.
Applications that enrich learning	In addition to the educational software pre-loaded on each PC, professional development for teachers encourages the use of the home learning center as part of the standard curriculum.	GRSD uses Power School to support teachers with electronic content management, lesson plans and additional services. The District provides templates for lesson plans and web sites; professional development includes specific training on technology integration.	A curriculum cornerstone of the New York program is the use of the Thinkfinity application from the Verizon Foundation which provided enrichment resources that have been mapped to the New York State educational standards. http://www.mped.org/home.aspx

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Program Element	Computer for Youth	Gateway Regional School District's One-to-one Laptop Program	New York State Technology Placement Program (TPP)
Enhanced communication channels between school & home	While the Computers for Youth program has no specific ongoing communication programs, the Saturday training event for students and parents encourages parent engagement and school/home connections.	As part of a larger program to "webify" Gateway Regional School District. The District has moved many functions online. All library resources on line; students can apply credit to their school lunch account online; all teachers have an electronic "public box" and a "drop box" for students to pick up and drop off assignments online.	Since this is a teacher program, the communication is between the Teacher Centers and the educators in the state. The use of a standard template has streamlined and unified communication and offers associated with TPP program.
Financing options	For cities in which CFY has an office, this program is provided at no charge to families. Program costs are covered through fund development and in-kind contributions.	GRSD offers families the option to lease a computer with a three-year loan with monthly payments targeted at $30 to $35 and a $1.00 buy-out option. Students refresh their PC at grades seven and ten.	Financing is available to qualified buyers through Dell®.
Training and Support	For affiliates, training is integral to the Computers for Youth program. It starts with professional development for teachers, moving on to the Saturday family-training event and continuing with ongoing workshops offered for parents and teachers. In the Direct Model, technical support is also provided by Computers for Youth.	Family training is cornerstone of the Gateway one-to-one program. The District sponsors a series of training sessions where students bring their laptop and parents. Seminars cover topics such as basic computing, connecting to the internet, home networks, photography, video, databases, and the NoteTaker™ application. The District runs a digital film camp in the summer. Technical support includes a help desk, loaner fleet and depot service from the vendor.	Offered through the New York State Teacher Resource and Computer Training Centers, the TPP course bundle is designed specifically to help teachers use the PC, software and applications to support their own learning and teaching. Courses are designed to support curriculum integration and 21st century skill development.
Vouchers or Incentives	With the PC and software provided at no cost to families, families have a distinct incentive to invest their time in the training.	Students who qualify for free or reduced lunch pay one-quarter or one-half, respectively, of the monthly fee, a cost that is offset by funds appropriated in the district technology budget.	Professional development is provided at no charge to teachers. The PC bundle is discounted but no additional incentives are offered at this time.

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