Community Technology Review

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Ohio and the World of Community Technology

OCCN:
The Ohio Community Computing Network

Making Connections:
The 13th Annual CTCNet Conference in Cleveland

VISTA Project
Support Specialists

International: Taking the Chicken Bus to Internet Outposts in Guatemala

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ComTechReview

Community Networking and AFCN

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Policy, Advocacy and Organizing

Research and Evaluation

International

Resources

Perspective

Cover: OCCN staff (clockwise from top): Angela Stuber, Marsha McDevitt-Stredney, Gabe Gloden. VISTA Project Support Specialists (clockwise from top left): Frank Odasz, Jilliane Smith, Ed Schwartz (courtesy of Hallwatch.org), Nettrice Gaskins.

Editor's Introduction

Ohio and the World of Community Technology

I'm very pleased to be involved with this issue of the *Review* focusing on the special resources of community technology in Ohio, occasioned by the hosting of the 2005 Annual CTCNet Conference in Cleveland, June 17-19. It's not only from having been raised in Columbus—I recall, too, quite vividly, the extraordinary phone call I received one day in the 1994, early in my tenure as Network Director of CTCNet (actually, the Playing to Win Network at that point): "Hi, I'm Ellis Jacobs, Dayton Legal Services attorney working with a group of consumer and community organizations and the Public Utilities Commission of Ohio (PUCO) — we're getting millions of dollars from an Ameritech settlement and I've been advised you can help us figure out what to do with it."

The story of the settlement and the subsequent development of the Ohio Community Computing Center Network (OCCCN originally) was covered in the Spring 1996 issue of the *Review* (at that time, *Community Technology Center News & Notes*) in Ellis' article on "Public Utility Commissions and Sustainable Funding for Community Technology"—along with two other stories about the first Columbus CTC and the OCCCN. The six new Ohio affiliates (along with Dayton Access Television) gave Ohio the third largest CTCNet contingency in 1996, next to the 19 in NY, 17 in Massachusetts, 20 elsewhere across the country, and five internationally in El Salvador, Ireland, and Poland. There's been Ohio coverage in the *Review* ever since (see sidebar, pg.14).

This current issue is marked by Ohio contributions from beginning to end, with a special section on OCCN (edited by Angela Stuber and Gabe Gloden)—Ten Years On—and nine stories highlighting different centers and their incredible VISTA Project. Anne McFarland's "Rise and Fall of the Ohio Free-Nets"—the sixth installment of her "Community Networking on the Night Shift" series—documents the impressive founding role that Ohio Free-Nets played in the community networking movement. The forceful and defining essay on "Community-Based Research" is written by Randy Stoecker, at the University of Toledo, home of comm-org, the online conference on community organizing and development. Randy's book on *Research Methods for Community Change*, is reviewed here by Melissa Jeter, a community organizer and college instructor, also in Toledo. The excellent research and evaluation articles here also include Mary Stansbury's "Update on Digital Divide Research, Ohio and the Nation." Note that our international story on "Community Technology, Guatemalan Style," is by former Oberlin, Ohio VISTA Paul Pitcher, who makes clear how much of his experience he brought with him.

The current issue, of course, has much more. Updates from UMass/Boston with the VISTA Project and the Community Media and Technology Program—AFCN and community networking developments, Phil Shapiro's Digital Divide Network update and two pieces on federal telecom policy and what's on the horizon, portraits of project developments in India, Nepal, and West Africa, and more, all concluding with a "Perspective" on the future by OCCN Director—and CTCNet Board President—Angela Stuber. We think we've captured a good part of the movement and excitement that's going on now and welcome your comments and contributions. *—pm*

The CTC VISTA Project—Update for Year 6: 2005-'06

Peter Miller and Paul Hansen

The community technology CTC VISTA project—the most popular project in the entire AmeriCorps online recruitment system—will be operating in the 2005-06 program year under new guidelines that invite participation by a wide range of community media and technology organizations involved in providing digital opportunities and resources to those who do not ordinarily have access to them.

Briefly, we are moving towards becoming a more proactive project with the establishment of priority areas. The project will develop resources and curriculum to support, learn from, and teach best practices in these areas:

- community networking
- community organizing and development
- technology support to non-profit organizations
- digital media support programs for youth

CTC VISTA Project Priority Area Coordinators: Nettrice Gaskins, Frank Odasz, Jillaine Smith, and Ed Schwartz

While organizational applications are being accepted on a rolling basis, the project will operate largely on a first-come, first-serve basis for all who submit approved plans. Final applications are sent to the appropriate Corporation for National and Community Service state offices on July 11, for the end of August PreService Orientation program start. Participant organizations should plan

to have the appropriate staff attend the Supervisors Orientation and Training Program on one of two dates: the preconference June 16th session in Cleveland prior to the CTCNet annual conference, or the September 12th session in Boston.

Overview/Project Priorities

Since 2000, the CTC VISTA Project has provided coordination, recruitment, training and support for a yearly cadre of approximately 40 AmeriCorps*VISTAs working in community technology centers (CTCs) and related programs across the country. Organizations interested in becoming involved should meet project priorities and other qualifications and be responsible for covering project fees and other expenses, as described in the project basics.

Program changes were initiated at the urging of Corporation for National and Community Service leadership in Washington, DC, which encouraged the Project to become more directive by promoting program and resource development in targeted areas. The Project has thus defined a set of priorities that promote cutting edge work in the field that we believe will enhance the effectiveness of our VISTA members and the organizations they support and increase the impact of their work with underserved communities, thereby strengthening the Project, supporting the movement, and benefiting all parties involved.

Applicant organizations are free to address a variety of organizational and program needs, including the traditional AmeriCorps*VISTA ones involving volunteer program development and management, developing partnerships and program material for outreach and fundraising. The VISTA work plan should contain at least one goal that addresses the project's program priority areas that will have prominent area specialists to provide individual and group support as follows:

- Community networking, including wireless. The recent burst of energy and initiatives around neighborhood and municipal wireless projects, as noted in recent issues of the Community Technology Review and elsewhere, underlines this as one of the most promising areas for community information and communications technology development in the immediate future. Experienced community networking projects as well as organizations new to the arena with promising plans that can use the capacity building resources of an AmeriCorps*VISTA member are encouraged. Special support will be provided by Frank Odasz, Lone Eagle Consulting, cofounder and board member AFCN, author and online course developer with emphasis on using the Internet to build learning communities.
- Community organizing and development, using emerging technology organizing tools such as GIS systems, databases, podcasting, and blogs as well as cell phones, photography, and other non-traditional organizing technology. An interest in using and developing open source resources, both applications that run on proprietary operating systems as well as Linux, is especially welcome. Support provided by Ed Schwartz, author of *NetActivism: How Citizens Use the Internet* and founder/director of the Institute for the Study of Civic Values.
- Technology support to other nonprofit organizations. When the applicant is not a CTC, some programmatic component involving CTC support should be included. With the elimination of traditional technical assistance (TA) to Nonprofit programs supported elsewhere by the Corporation, the need to address technology needs of the entire sector is pressing. Support provided by Jillaine Smith, specialist in integrating technology support, strategic communications and organizational development; NTEN and Alliance for Nonprofit Management member.
- Programs for at-risk youth,with a particular emphasis on digital media skills acquisition. Project-based arts, media, and technology programs, with academic support, are especially encouraged in helping young people gain skills that prepare them for college and tomorrow's workforce. Support provided by Nettrice Gaskins, adjunct faculty and computer arts academic specialist, UMass/Boston and Mass College of Art; board member CTCNet and NAMAC.

Program fees/costs and other information

Program fees are $2,500/VISTA for CTCs new to the project, $3,000 for continuing CTCs; $3,000/VISTA for new support organizations and organizations supporting CTCs at more than one site; $3,500 for continuing support organizations and multi-site projects. Organizations should additionally budget for: CTCNet Membership ($100); funds for your VISTA to attend the CTCNet annual conference in June 2006; transportation, professional development, and support amenities. For more details on program fees, the application process, and the selection process overview, see the project basics. ◆

Peter Miller is director of the CTC VISTA Project;
Paul Hansen is Assistant Project Director.

UMass/Boston Community Media and Technology (CMT) Program Update

An Interview with Fred Johnson

Daniel Schackman

The Community Media and Technology (CMT) Program at U Mass Boston's College of Public and Community Services (CPCS) is evolving, with some new structural changes in the coming year. The *ComTechReview* sat down with Fred Johnson, Director of the CMT program and the Clark Taylor Center for Media, Arts, and Technology, to learn about what these changes mean.

FJ: We are now a little over a year beyond the time when the Board of Higher Education allowed us to start offering a B.A. in Community Media and Technology. We're finding that despite the meager resources that are afforded public higher education in Massachusetts these days — for things like faculty and outreach — our program is growing and raising a number of logistical questions for the College regarding how this new curriculum, and these new kinds of practices, fit together here. CPCS has a unique competency-based curriculum, we have a unique way of delivering that curriculum, and we've had to find a way to work through integrating everything.

What we've come up with is an approach that focuses our efforts around the Clark Taylor Center for Media, Arts and Technology, generously funded by Monster.com founder Jeff Taylor in honor of his father, a recently-retired CPCS faculty member. The Taylor Center is really three kinds of places. First of all, it's a center for research and development (R&D), a place where this College's social justice values, research and project-based learning initiatives are able to find institutional expression, one that allows our program to form partnerships nationally, regionally and locally with community and non-profit organizations, government agencies, and NGOs — and the CTC VISTA program here couldn't be a better example. Secondly, it's an overall learning center for CPCS, where students and faculty have an opportunity to undertake some innovative uses of software and media applications for curriculum development and curriculum design and for teaching and organizing with technology and media tools. Third, it is the administrative entity that houses the CMT program.

In terms of the R&D, I and other faculty are starting to do research focused on community media and technology applications and policies, and the Clark Taylor Center provides the structure that allows us to invite other people to come here and affiliate with us in a number of different ways, to undertake participatory community-based research with community media and technology practitioners, for example, or more traditional, academic research, so long as it helps create knowledge about the emerging new sectors of media/technology practice. This opens up opportunities for research and knowledge creation focused on the potential of new media, communications and computing to create media change, social change and justice. There is too little discussion about the actual policy and political environment out of which technology and our media system emerge, and that's one of the things we want to convene discussions about in the Clark Taylor Center for Media, Arts, and Technology. Communications technology is the core element of the global economy that's driving change; it's part of the strategic core; and there's no reason we should not be looking at that in all kinds of critical ways and undertaking project-based learning about it. We're starting a public policy network consistent with the University's responsibility to convene significant discussions around matters of the public interest and public policy.

CTR: How will distance learning be utilized by the CMT program?

FJ: We're looking at a number of options about distance learning, and one of the things that we're able to do through UMB's Division of Corporate, Continuing, and Distance Education is offer the core, most significant parts of our curriculum online to anyone anywhere in the world at Massachusetts resident rates. We're looking at guest faculty and co-teaching arrangements with prominent folks who might be in California or North Carolina, for example, which would allow us to have our students working with some of the most accomplished practitioners in the fields that come together in our program. We're looking into hybrid courses that are interactive on-line classes that collaborate with classes someone might be teaching at another institution. One initiative that we're pretty confidant is going to work for us is to convene classes that provide a week of intensive instruction and the creation of a face-to-face community of learners, after which participants go off to their respective sites and finish up using on-line courseware. I'm really attracted to that model and we are going to be doing a lot of that. That approach could easily be integrated into national organizations' training programs of professional development and at the same time provide people with academic credit.

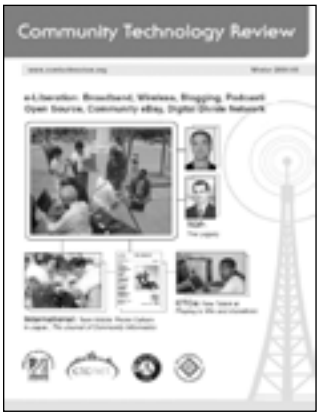
CTR: How do the CMT program and the Taylor Center address digital divide issues?

FJ: What we're concerned with is the fact that media and information technology, whether in the form of media, data, whatever, are driving serious changes in our society. There are two major divides, one digital and one cultural. There's a whole political initiative around equitable distribution of the Internet and telecom resources in the US and globally, but we're also trying to reform, no transform, our media system, and those are really two different sets of political efforts that we have a responsibility to work on simultaneously to see how they can cross-fertilize, and cross-subsidize, each other. There's a digital

divide where we're concerned about access to, and development of, the Internet and other Information and Communication Technologies (ICT), and the equitable distribution of the social benefits associated with access to the Internet and its resources around the planet. And there's that other divide that's more of a cultural divide — a huge shift in how mass media functions in terms of media culture in our societies. The globalizing media are cultural institutions that are increasingly becoming hyper-commercialized and unaccountable for any public interest obligations. Overcoming both of these divides is critical to democratic development, and they contain key elements of any solutions the world is going to come up with to address the huge racial and economic injustice disparities we are now facing.

We see these venues — the Clark Taylor Center for Community Media, Arts and Technology, and the CMT program — as a place where we look at how these things all fit together, how they synthesize, how they don't synthesize. We're looking for a common vision to the extent that's feasible, and also looking for the places where it's not possible; and, we want to learn how to establish collaborative processes across the boundaries of impossibility — that's where the real fun begins. We're interested in seeing how a lot of the changes in information technology are becoming forms of expression, and what these new forms of expression have to do with citizenship or artistry — how they find their way into the media culture. We want to explore from the perspectives of communities all kinds of global and national communications issues. Looking at how media reform might impact on local news, for example, or what local policies are going to be required around equitable wi-fi and broadband—all those things are part of the national policy debate, but need to be looked at from the point of view of their impact on communities, and that's our job. That's how we're seeing this, and we want people to understand that this is a good place to undertake those kinds of dialogues and investigations. ◆

Daniel Schackman, previously a VISTA with CTCNet, is one of two VISTA Leaders with the CTC VISTA Project and Assistant Editor of the Community Technology Review.



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- The Champaign-Urbana Community Wireless Network *by Sascha Meinrath*
- The eBay Lesson for Community Development *by Frank Odasz*
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Remembering Dirk Koning

Tim Goodwin

Dirk Koning, one of the great visionaries of community media and technology, died in February at the age of 48 from complications during heart surgery. Dirk was Executive Director of the Grand Rapids Community Media Center (GRCMC) since 1981, Chair of the Editorial Board of the *Community Media Review*, and President of the Washington D.C.-based Alliance for Communications Democracy, though his official titles just begin to touch on his accomplishments and the bridges he helped build.

The *ComTechReview* has covered Dirk's work since the fall of 1995, including including an edited version of the GRCMC vision statement that year, and 1999 coverage of his long-range views in presenting The Grand Rapids, MI, Community Media Center 25 Year Plan. In our Summer 2004 issue, Spotlight: Dirk Koning highlighted his work as one of the key CTCNet conference participants.

The *ComTechReview* asked Tim Goodwin, Managing Editor of the *Community Media Review (CMR)* and close friend and colleague of Dirk, to provide some appropriate eulogy and remembrance that we could share, along with links to numerous other testimonies that were being written. An extended version of Tim's tribute will appear in the next *CMR*. —the editors

"He stood six feet eight inches tall and he was dressed in a t-shirt with a slogan on it and his name was Dirk and he loomed over me to ask if I had a few minutes to talk about public access TV. Sure. Hell, yes. As soon as my pulse rate returned to normal. As soon as I could stop wondering whether I'd get to keep my credit cards. Actually, once I realized he did not intend to carve a zodiacal sign on my abdomen with the rusted edge of an Indiana license plate, I sort of welcomed his company."

So went the opening lines from Pulitzer Prize-winning media critic Ron Powers in his July 1986 column in GQ magazine after the annual meeting of the National Cable Television Association.

Dirk Koning was a big guy! Five-foot-twenty he often would tell people who asked. It was his most obvious feature, and it served him and our mission well. Invariably, it found its way into scores of articles, even this one, and in many of the eulogies that followed his death February 10, 2005 from a routine heart procedure gone fatally wrong.

Big he was, but he was absolutely huge in our movement. He was, I would tell him, the best thing I ever did for community media, an honor I had as founding chair of the Grand Rapids Community Media Center when we hired him as Executive Director in 1981. But it was also one of the best things I ever did for myself. We became best of friends, soul mates, and fellow travelers in this cause of democratic communications.

Dirk came to define the very meaning of community media. The medium was never the message. It was never just television. Never just radio. Never just the Internet. They were just tools to Dirk. He was, he said, a "community organizer, around the use of media to share information."

Dirk understood early where it was heading. "It seemed to me such a natural evolution — convergence of all information into digital transmission," he said. "Voice, video and data would not necessarily be independent worlds any longer, either in the media or the methods." And then he set out to make it so at the Grand Rapids Community Media Center, which exemplified the community media center model with its public access TV, FM radio, nonprofit Internet service, and media literacy institute.

But as big a man as Dirk was in this physical world and the community media movement, he was larger than life in the hearts and minds of those who knew him, and his death has left a bigger void in our souls than his physical presence ever did in our lives. To know Dirk was to be his friend, as I, and many of you in this movement, had the great joy to know.

It was no surprise that people came to his memorial services from three continents and from across the United States on Valentine's Day 2005. You didn't expect death from Dirk. He lived such a serendipitous life.

Dirk was a citizen of the world with a keen sense of justice. He carried this seed of liberty we call community media to far corners of the planet, from South Korea to South Africa to South America, Europe and hundred stops in between, maybe one of them in your own backyard. To Dirk, these were seeds of peace. To understand each other was the first step to respecting each other, a prelude to peace. He used the tools at his command and his own very unique presence.

We mourn our loss. As City of Grand Rapids Mayor George Heartwell said in his eulogy to Dirk, "Dirk, we are you, inheritors of what we mourn. You have, indeed, given us a rich inheritance. May God make us worthy to walk in your way, strong to stand against resistance, and unflinching in our commitment to justice."

Tim Goodwin is managing editor of the Community Media Review (CMR) *and founding chair of the Community Media Center in Grand Rapids, Michigan. The* CMR *Tribute includes remembrances from leaders in the community media and technology fields, and links to* CMR *articles written by Dirk.*

The Grand Rapids Community Media Center Dirk Koning Tribute includes a biography of Dirk, a eulogy, links to other tributes and for you to post your own appreciation. Dirk Koning: A Life Beautifully Lived is a tribute blog.

Community Networking:

Movements in the Field and at the Radical Center

Michael Maranda

AFCN members and leadership have been actively surveying the field of Community Information and Communication Technology efforts, challenges, threats and prospects, and laying the groundwork for new relationships. There is some urgency in our learning how to work together in a more coordinated manner. This insight is not peculiar to Community Networking. More and more of the activists and practitioners in Community ICT are coming to this realization and have been taking strategic steps to build the movement.

It is important to recognize and respect the spontaneity and universality of community networking as a process. Parallel and independent visions unfold as people take up the tools of the information age and realize the potential of their application in diverse circumstances. There has been a recurrent tendency to identify the particular forms in which the community network is manifested as the extent of community networking. However, we face a moment of transition where breaking from form to an appreciation of that spontaneity and universality will facilitate the healthy and intelligent development of our field.

First Stop, Vancouver: Visions of Convergence

The 2005 "Strategic Use of Information and Communication Technologies for Communities" Summit was convened in Vancouver, British Columbia at the end of February This was a deliberate convergence of several events for the Canadian Community ICT field and in scope extended to the hemispheric vision of the Telecentres of the Americas.

In this context designed to synergize across diverse experiences, conditions and sectors, the sizable contingent present from the AFCN met with friends and advisors to discuss the coordination of our efforts, and a vision to advance the strategic alignment of the positive social forces behind community ICT emerged: we would shamelessly borrow the best ideas of our friends across the Americas.

In the states, too, we can identify several fairly distinct sectors of community ICT. We have the shared ambition of improving conditions in society and globally, humanizing technology and democratizing or otherwise opening our political life. We're challenged to come up with new strategies that build our capacity to project our collective voice and coordinate efforts. Each sector of community ICT has something to learn from the others, but each also has its own history and practices. Different structures, patterns and interests prevail in community and independent media, community technology centers and programs, community networking and community wireless networks, community informatics and research, eRiders and others of the Nonprofit Technical Assistance Provider (NTAP) community, and the Free-Libre/Open Source Software (FL/OSS) & Social Source communities.

Among organizations such as AFCN, CTCNet, the Alliance for Community Media (ACM), Free Press, the Community Informatics Research Network (CIRN), and the NonProfit Open Source Initiative (NOSI), the need to forge sustained alliances and align strategies is clear. We must promote spaces for that dialogue.

Penguin Day Chicago: Open Source & Social Source

FL/OSS advocates offer a variant of the NTAP network that deserves a special place in our movement. Penguin Day has emerged as a tool for seeding and energizing local efforts and coordinating strategy and development.

Linus Torvalds, the founder of Linux, chose the penguin as the emblem of Linux, the flagship operating system of the open source movement, and now the penguin has been taken up as symbol for the free and open source movement in general, and for Penguin Day happenings in particular.

Penguin Day is a happening. It creates community and effects an efficient transfer of knowledge through exhausting but exciting techniques such as "speed-geeking." Penguin Day activities exemplify the local-global perspective of the FL/OSS and Social Source community, promoting open source to the local non-profit community and deepening the network that advances the development and dissemination of FL/OSS and Social Source solutions.

My first exposure followed upon NTEN's national conference where national FL/OSS NTAP leaders such as Katrin Verclas and Allen Gunn of Aspiration, and John Stanton and Amanda Hickman of the NonProfit Open Source Initiative (NOSI) joined with Chicago area NTAPs Teaming for Technology and NPOTechs for Penguin Day Chicago.

Social Source and Movement as Network

You've probably heard of Open Source but may be asking what is "Social Source"? Jonathan Peizer of the Open Society Institute articulated the concept of social source as "marrying open source software development with social service and social change applications." Excellent background materials and active development can be witnessed in the context of the environmental movement at the Movement as Network site, established as a project of ONE/Northwest, an NTAP to environmental organizations whose home is Seattle.

The Movement as Network project takes its name from a paper by Gideon Rosenblatt, Executive Director of ONE/Northwest, and provides a public space for re-imagining the environmental movement. There are many parallels as we advance the Community ICT movement, much to learn from their experience, and perhaps many reasons for strategic coordination.

A quick run through Rosenblatt's paper provides us with an exceptional map and path forward: Movement as Network—although it's sometimes hard to identify an encompassing name, we're not a vague concept. We're part of an entity, a network, a movement comprised of people, organizations, and real connections. From within our movement we don't often see or feel our relations together as a movement and network: we're fragmented; we compete for resources and operate along institutional lines against our own common interest. We serve communities, organizations, and people in a field of fragmented power and find it difficult to assemble the resources needed to confront the tasks at hand or to coordinate a common voice on basic issues.

However, by making the shift to the network perspective, we can begin to assess and establish a differentiation of roles which will allow for more effective connections within the network. This in turn will lead to a stronger, healthier network; building that network out of the fragments of a movement. This is an application and exemplification of Civic Intelligence as theorized by Doug Schuler.

Freedom to Connect

Media ownership continues to consolidate and ICT and Telecom firms have been rewriting the rules of infrastructure ownership and obligation, state-by-state. In the not-too-distant future this will be in full swing before Congress. It is time to reflect upon the values inherent in the original design of the Internet, and for the community sector to indicate what we want the future ownership of our ICT infrastructure to look like.

F2C: Freedom to Connect, organized by David Isenberg, a telecommunications expert and author of the seminal essay "The Rise of the Stupid Network," began the public discourse just outside the District of Columbia at the end of March, assembling leading thinkers in community Internet policy. Vinton Cerf, part of the team that designed the TCP/IP protocols, the basic architecture of the Internet, spoke eloquently on the importance of maintaining the integrity of the layers of the TCP model. Susan Crawford, Policy fellow at the Center for Democracy & Technology and now teaching at the Cardozo Law School, challenged the premise of F2C with the view that we don't need to assert our freedom to connect legislatively, as that assumes the state can grant or take it away, and that our collective need to regulate reflects more upon our inner demons. Might we be better off with no regulation?

But "regulation," and, for that matter, "politics" aren't bad words or concepts. Understanding our communications networks from a political framework is as important as the prevailing discourse which presents most everything in an economic one. As we contemplate the communication freedoms we think necessary to democratic society, the progressive democratic capitalism advocated by Mark Cooper of the Consumers Union, we'll be more to the point in framing the issues from the perspective of our roles as citizens rather than as consumers. We need to proceed from the framework appropriate to the community perspective, otherwise we will lose the best of our heritage.

Houston's Technology for All Wireless Project and the National Municipal Wireless Debate

Will Reed

Municipalities involved with the development of community wireless projects and efforts to prohibit them are at the center of a national public policy debate that revolves around legislation under consideration in half a dozen states. Incumbent telephone providers seem to be behind much of the proposed legislation that could significantly impact the ability of community technology practitioners and other community groups to collaboratively work together with municipalities to bring wireless Internet services to low-income and under-resourced communities.

The Technology for All Wireless Project in Houston—TFA-Wireless—officially entered the fray on March 3 when the Houston Chronicle covered it and Texas legislative efforts to stop it and similar projects under the front page headline "Wireless Networks Don't Click with Some," subtitled "Telecom bill would ban free Internet access like that in model East End program." Within 72 hours the article was picked up by over 300 blogs.

TFA-Wireless is a collaboration between Technology For All (TFA), Rice University and the Houston Public library. The project is a part of the research undertaken by the Rice Networks Group led by Dr. Ed Knightly, who is Rice's lead investigator in the 100 x 100 project, "charting a path to 100 Mbps [very high speed] access from 100 million homes." TFA-Wireless utilizes mesh box technology enhanced by research led by Rice Ph.D. student Joseph Camp. TFA's initial vision of the wireless network was to enhance and extend TFA's job creation project funded by its 2003 Technology Opportunity Program (TOP) grant from the U.S. Department of Commerce. TFA-Wireless will allow neighborhood clients of TFA that are trained and employed by TFA-JobTech to work from their homes.

Knightly, Camp, and I have written an article about the project, "Developing and Deploying Multihop Wireless Networks for Low-Income Communities," being presented at the June Digital Communities 2005 conference in Italy. It expands upon the societal objectives of the network, the joint technical and economic objectives that drive its architecture, and its future deployment, performance, and research challenges. ◆

Will Reed is President and Chief Executive Officer of Technology For All in Houston, TX.

Jim Baller, attorney at Baller & Herbst and advocate for municipal rights, broadcasts a daily email with links to news from communities like yours that are engaged in battles over regulation that would limit their rights to deploy communications infrastructure. Many of these battles are concentrated in our state legislatures. Soon it will be taking place at the federal level.

The Community Informatics Intitiative

How do we help communities work from their own perspective? How can the tools of ICT be made to serve community interest? How do we involve the Academy in community in a meaningful and respectful manner? Chip Bruce and Ann Bishop (AFCN Advisor and former board member) of the University of Illinois at Urbana-Champaign (UIUC) Graduate School of Library and Information Sciences (GSLIS)—home of PrairieNethave launched the Community Informatics Initiative (CII) in the spirit of Jane Addams and John Dewey to address these questions.

Community informatics is "*the application of information and communication technologies to help communities achieve their goals,"* and the Community Informatics Initiative at UIUC establishes the first formal hub for the community informatics movement in the US, creating a space for this emerging field of research, learning and action activities. An introduction to the new *Journal of Community Informatics* and its importance to our work was published in the last issue of the *Commuinty Technology Review*, and UIUC will be helping develop that resource.

U of Illinois' GSLIS is a fitting location for this "hub." Libraries and Library and Information Science schools have long been part of the infrastructure of the Commons and stalwarts of the community networking movement. Along with the University of Michigan, the professional training in the organization and navigation of knowledge provided at these schools should be accorded great esteem in the community ICT field.

TOP Legacy Project

The story of the Technology Opportunities Program (TOP) is not over. Let us thank the cadre of leaders in community networking and informatics who stepped forward to preserve our heritage. The Community Informatics Initiative at UIUC and the University of Michigan will archive the riches of the TOP legacy. This resource will be of great value to scholarly communities such as the global Community Informatics Research Network (CIRN) and may yet be leveraged to wider benefit through dissemination and replication of these innovative models. You can be sure the AFCN will do its best to support and promote this endeavor. Incurable optimists, we think this will justify a successor to TOP.

Open Space Austin and Beyond

We are witnessing many movements in the field. We are each active in one or more of them, and can grasp to various degrees the great diversity of efforts and how they reflect related issues. Much remains to be strengthened, built, and connected to our daily community lives as we approach the *radical center* that roots us.

Open Space Austin was convened as the 7th annual community networking conference at the end of April in this spirit, to reach beyond community networks as specific formal entities, to widen and exemplify the process of community networking. The accompanying notes by Frank Odasz and Jon Lebkowsky offer a glimpse of what took place and what we will build upon in expanding our networks as movement. ◆

Michael Maranda is President of the Association For Community Networking, and co-Chair of the Illinois Community Technology Consortium.

Open Space Austin: April 29-30, 2005

Frank Odasz

Open Space Austin certainly reinforced everyone's belief in the value of meeting face-to-face. We had a near perfect mix of attendees — ISP reps, rural community leaders, project directors, consultants for telecommunications and economic development, activists, academics, and many new faces representing expertise in community media, mesh wireless, as well as several of the old guard of community networking. Our only regret is that many good folks were unable to join us in these lean economic times.

This was the first time I've attended a conference that focused 100% on supporting the networking among attendees. Typically, conferences are competing presentations where most presented information is missed by most attendees, and everyone struggles to network in the halls during the limited time between sessions.

Jon Lebkowsky's conference report noted above does a fine job covering the themes discussed and you might enjoy his blog, too. Michael Maranda and other participants have been posting follow-ups to generate new partners, resources, energy, and fresh ideas. The bottom line is never has there been a greater need for good people to come together to make good things happen. By working together we can build collaborative capacity that benefits everyone involved.

This is the core challenge for *all* community technology organizations — to come together to walk-the-talk and create an organized, if informal, advocacy consortium to jointly address national and state policy issues as a first priority as well as more efficient sharing of resources and expertise as a second priority.

Among the participant work and contributions:

- Richard MacKinnon has sustainable venues with many organizations serving 40,000 people with wireless in Austin, a model well worth further exploration—and he's working to create OrgForge.net, a project to support organizations develop into nonprofit 501c3's or the best appropriate format.
- Sascha Meinrath shared his community wireless innovations, which are now key listings with other wireless resources I've gathered.
- Ana Sisnett impressively represented the Austin Free-Net and the diversity issues and opportunities before us.
- Inspiration for future whitepapers articulating how AFCN can work more closely with the Rural Telecommunications Congress, CTCNet and many other com-tech orgs can be found in essays by our colleagues in the environmental movement "Movement as Network" project.
- Texas telecom policy bill 789 threatens to outlaw communities installing wireless for their citizens even when the telcos refuse to deliver service. Kudos to SaveMuniwireless.org for carrying the torch of opposition on this goofy legislative pitch which is happening all across the country.
- Will Reed and Jim Forester represented TechnologyforAll and its intriguing social enterprises.

Community Networking in the 21st Century

The Tech Bloom – Collaborative and Emergent Technologies

"The Community Networking movement has run parallel to the evolution and growth of the Internet as a way to bring access to, and meaningfully use of, computers and computer networks to underserved populations, mostly in rural and depressed urban areas within the U.S., and in developing nations. The various organizations within the movement have focused on access and t raining to bridge the "digital divide" and ensure information equity. One of the leading Community Network Organizations, the Association for Community Networking, used the Seventh Annual Community Internet Summit (formerly called the National Community Networking Conference) as a platform new thinking about where the community networking movement should be and should go, via Open Space Austin, "an intensive two day strategy meeting, designed to spark common alignment, new alliances and individual actions for anyone passionate about community & independent media, community networking, community wireless, community informatics & research or community technology and the relevance of these to community and economic development."

— from Jon Lebkowsky's report on the conference

- Peter Miller and Paul Hansen shared the exciting new community technology VISTA project directions which will have a community networking project component and other new innovations.
- Fred Johnson has a full-time faculty position with the UMass/Boston Community Media and Technology program working with the VISTA project.
- Richard Cutler is working with innovative Forum 9000 "smart social networking" software systems.
- Christopher Jowaisas represented the library projects of the Bill & Melinda Gates Foundation, libraries having an unshakeable role to play in community learning programs at all levels.

Literally every participant has a passion and story to tell — I've encouraged everyone to share their passions and visions via the AFCN listserv and elsewhere. It was very clear that those who made the extra effort to attend were there "on a mission."

Spring is the season of renewal and may we all renew our commitments to what we believe we can make happen together! ◆

Frank Odasz is a long-time contributor to the community networking movement and the ComTechReview. *See his latest complete listing of resources.*

2005 CTCNet Conference Program

The Conference program web site provides additional information and material for each session and will have additional material afterwards. Note that the nearly fifty sessions and workshops are divided into six tracks:

- Organizational Capacity & Leadership (CAPACITY)
- Achieving Community Impact (COM_IMPACT)
- Policy & Civic Engagement (POLICY)
- Program Design & Management (PROGRAM)
- Research & Evaluation (RES & EVAL)
- Technology Innovations & Solutions (TECH)

Thursday, June 16

VISTA Supervisors' Orientation Session: All day or 1:00-5:00

1:00 pm - 5:00 pm Pre-Conference Workshops:

Making Strategic Partnerships Work!

Designing A Logic Model for the Community Technology Field: Key Evaluation Concepts & Practices

Youth Visions: Media Literacy & Media Production for Youth

Introduction to Social Entrepreneurship

5:30 pm - 8:00 pm — Site Visits

Friday, June 17

9:00 am - 10:00 am — Opening Plenary

10:30 am - 12:00 pm Breakout Sessions:

POLICY: CTCs & Municipal Networks: Building Access to Economic Assets

CAPACITY: Your Network is Your Power: Social Network for Civic Engagment and Public Policy Advocacy

COM_IMPACT: Hands On Strategies for Community Change

POLICY: World Summit on the Information Society (WSIS)

PROGRAM: Afterschool and Technology: Strategies to Advance Content-rich Learning

RES & EVAL: Looking for Outcomes, Finding Value: A Guide to Locating Learning in Your CTC

RES & EVAL: How Does the Internet Help our Children Succeed? Introducing the Digital Opportunity Measuring Stick

TECH: Building a Successful Computer Re-Use Program

PROGRAM: Enhancing the Adult ESOL Learning Lab

1:30 pm - 3:30 pm Breakout Sessions:

COM_IMPACT: Feature Panel: Community Technology & Workforce Development

RES & EVAL: Occupational Self Efficacy and the Participatory Process: Recommendations for Improved Training

COM_IMPACT: Media Literacy for Healthy Communities

RES & EVAL: A Day in the Life of a CTC: Incorporating Evaluation into Daily Practice

PROGRAM: Literacy & Language Tools & Strategies: Success for All Ages & Abilities

COM_IMPACT: CTCs Adapting to Changing Populations: Research and Case Studies

3:30 pm - 5:30 pm Community Technology Share Fair

Saturday, June 18

9:00 am - 10:30 am Breakout Sessions:

PROGRAM: Learning to Learn: Urban Youth, Technology Literacy and Youth Development

TECH: A Look Inside the New Digital Divide Network

COM_IMPACT: Empowerment in a Wired Community

CAPACITY: Sustainability and Social Enterprise: Improving Your Community and Your Bottom Line

RES & EVAL: Is Time Really of the Essence? Conducting participatory evaluation of community technology initiatives

PROGRAM: Taking Basic Technology Training to the Next Level: Designing High Quality Curricula and Programs

COM_IMPACT: Legal Aid and CTCs: Working Together for Access to Information and to Justice!

CAPACITY: IT Fundraising for Nonprofits

RES & EVAL: New Research and Implications for Your CTC

11:00 am - 12:30 pm Breakout Sessions:

CAPACITY: Getting Technology Funding - Using What You Already Know.

COM_IMPACT: CTCs as a Capacity Builder and Technical Assistance Provider to CBOs

POLICY: Using GIS as a tool for participatory research with youth to promote civic education.

PROGRAM: Technology Programs that Sing (and Make Movies and Web Sites, etc.)

POLICY: Everything You Always Wanted to Know About Telecommunications Policy (But Were Afraid to Advocate)

PROGRAM: Selecting Educational Software

PROGRAM: Health Information As A Tool For CTCs

TECH: Access Aware: Beyond the Basics - Customized Tools to Enhance Everyone's Use of the Technology Center

PROGRAM: Starting a Successful National Service Program

12:30 pm - 2:30 pm — Toni Stone Innovative Initiative Award

2:30 pm - 4:30 pm — CTCNet Annual Membership Meeting

4:30 pm - 6:00 pm — Birds of a Feather: Topical Networking

4:30 pm - 6:00 pm — Community Discussion: Mapping for Impact

Sunday, June 19,

9:00 am - 10:30 am Breakout Sessions:

CAPACITY: Organizational Development & Management Taxonomy as Basis for Managing Resources

COM_IMPACT: Community Development Through Free E-filing for the EITC

PROGRAM: STEM career development for youth using digital libraries - The role of CTCs

PROGRAM: Teaching Others to Design and Build an Interactive Story Game with Multimedia Software

TECH: Tips on Successful Technology Center Management

TECH: Cool New Emerging & Converging Technologies

10:45 am - 12:00 pm — Closing Plenary

Learn & Serve with CTCNet

Youth Visions for Stronger Neighborhoods

Tara Kumar

What do youth living in the Asian-American community of Minneapolis, on a Native American reservation in California, and in a rural county in the Mississippi Delta all have in common? They have all committed to learn more about the communities in which they live, and to become involved in transforming them for the better.

Since 2004, CTCNet's Youth Visions for Stronger Neighborhoods, funded through the Corporation for National and Community Service Learn and Serve America program, has made youth civic participation possible by supporting CTCs in their use of multimedia tools and training to involve high school youth in community decision-making.

In 2005, a diverse group of eight grantee sites received $22,000 each to support program implementation, engaging youth in community decision-making across urban centers and very rural areas. The 2005 sites include:

- The Ark (Troy, NY)
- Asian Media Access (Minneapolis, MN)
- California Rural Legal Assistance Foundation/MANITAS program (Sacramento, CA)
- COSACOSA Art at Large (Philadelphia, PA)
- Mendocino Family and Youth Services (Point Arena, CA)
- Southern Perry County Youth Arts & Media Center (Shawnee, OH)
- Spy Hop Productions, renewal grantee (Salt Lake City, UT)
- Sunflower County Freedom Project (Sunflower, MS).

Youth Visions for Stronger Neighborhoods enables youth to assume the roles of urban planner and community developer, as they identify neighborhood needs by interviewing residents and business owners, mapping local assets, and conducting additional research through newspapers, the U.S. Census, and other online resources.

Armed with this knowledge, the youth will recommend ways in which local assets can be targeted to meet community priorities. Through the use of multimedia tools, the youth will then present their ideas at community meetings they have organized, and educate and engage local officials around these solutions.

After their Youth Visions program is complete, each grantee site will host a capacity-building workshop for other youth-serving organizations in their regions to learn how to use multimedia tools to promote youth engagement in their communities.

According to Olivia Robinson, Youth Visions coordinator at The Ark, the program has afforded youth with the opportunity to combine creativity with community involvement as they examine issues of teen nightlife, arts, and housing. "Though we are still in the beginning stages," says Robinson, "the students are already learning about the multiple views within our neighborhood related to their topic. It's opening our eyes."

Youth Visions grantee sites are provided with a flexible model curriculum and related educational resources for teaching skills such as critical thinking, public speaking, asset mapping, media literacy, and multimedia use. Grantees are encouraged to share their own ideas and adapt curriculum activities to meet their particular needs. Feedback from the grantees is then used to improve upon the curriculum, which will ultimately be provided to the broader field.

An integral element in Youth Visions success and continuous development is an "extranet," allowing grantee sites and CTCNet staff to track progress, comment on curriculum activities, access resources, and share program ideas in a supportive, easy to access electronic framework. Participating youth have their own website, through which they can post to blogs, highlight key web resources, and interact with one another across program sites. Both websites will become publicly accessible in 2006.

Youth Visions coordinators and youth participants from several sites are attending the 14th Annual Community Technology Conference, June 17-19 in Cleveland, OH. The youth will help document the conference, and showcase their final multimedia presentations at the Pre-Conference Day on June 16th.

The Youth Visions program will continue in 2006, with funding available to support eight additional sites. The Request for Proposals for the next round of funding will be available in Fall 2005. ◆

Tara Kumar is a CTCNet Program Associate.

OCCN: Ten Years On

Marsha McDevitt-Stredney

As OCCN celebrates its 10-year anniversary, I often find myself reminiscing about how far we have come and the significance of our journey. During our recent strategic planning retreat I recalled how difficult it had been in 1995 to find organizations with the right balance of technology skills, sustainability, experience in social services and education, and the ability to write a grant proposal to establish and operate a community computing center. We succeeded in finding and supporting fourteen centers awarding each $150,000 over a three year time frame. Our mission was to "bridge the digital divide" between the "haves and have-nots." The jargon has changed but the effort and, sadly, the need still exist. Each of our original fourteen centers had a unique perspective and experience serving their disadvantaged communities. When the three-year period of funding came to an end, some centers flourished, others were absorbed into larger social service agencies, and unfortunately over the next few years some just faded away.

In our ten years we have helped financially support 52 centers (see current members), held yearly conferences and trainings, provided resources and information, networked organizations, and overseen an Americorps*VISTA program placing full time members to help develop programs and outreach in CTCs throughout Ohio.

Looking toward the future of OCCN requires reflection but for reasons far more important than looking at how far we've come or all the things we've done in ten years. We look back to see if our work has really changed communities and people's lives. It's not enough simply to know someone completed a program; the real question is what changes took place in their lives after the program. To know this we need to keep track of people, share stories about their experiences, and analyze which programs work, when, and why. Ohio CTCs have served thousands of disadvantaged people and, yet, still so many people lack skills necessary to thrive in our technology-dependent society. Community access to technology and training issues evolve just as technology has over the past ten years.

State and federal education requirements for children and teens have increased dramatically. These requirements are the proverbial double-edged sword for school districts. On the one hand, we want all children to reach their full potential, but, on the other, when schools lack adequate funding, programs and highly qualified teachers, it becomes a matter of increasingly doing more with less. CTCs provide that vital link to school success when they work with local educators to improve student learning opportunities and keep teens in school and on the path to graduation.

For adults, it's not enough to only teach basic computer skills if our goal is to move people from surviving to thriving. Basic computer skills enable people to survive in entry-level jobs. To empower people and communities to thrive we need to help get them on (and keep them on) the path for life-long learning and change. This path will lead individuals to better jobs and foster economic development within communities. In Ohio we have seen positive movement in this direction with partnerships between centers, libraries, schools, and community colleges. These partnerships provide the next step up to certifications and college credit. Moving in this direction does not require stopping services to those lacking basic skills. There will always be a need to help people get on that first step of the ladder.

I once heard the Golden Gate Bridge painting crew starts at one end and by the time they get to the other end they need to start over in an endless repetitive loop. I don't know if it's true, but anyone raising a family or running a household knows it's necessary to achieve a balance between providing the daily basics and working toward improving our homes, transportation, meals, and time with family and friends. With Ohio's CTCs, we are working toward achieving that balance, but like that painting crew, we often find ourselves repeating our efforts. And yet, every now and then, it's nice to take a step back and look at that beautiful bridge and take pride in the work. ◆

Marsha McDevitt-Stredney holds a Ph.D. from the Ohio State University in technology in the arts and arts education. She has worked for the Ohio Community Computing Network for over eight years.

Previous Ohio Features in the *ComTechReview*

In addition to the spring '96 coverage noted in this issue's editorial intro, the *Review* covered the establishment of the OCCCN Coordinating Committee and its initial plans in the fall of 1995. The fall '96 issue featured a story on Columbus's second center. In the spring of 1997, the Ohio VISTAs cover feature story by OCCCN Director Cary Williams was supplemented by Marsha McDevitt-Stredney's review of "OCCCN's 2nd Annual Conference" and Voncile Millender's overview of the Akron Community Service and Urban League CTC. The following year there were stories on the opening of the final original 14 Ohio centers funded under the PUCO agreement and, from the Ohio experience, reflections on "CTCs as Library Outposts." In the 1999 special convergence issue, Cary Williams offered a perspective "In the Public Interest: Telecommunications Policy in Ohio," with updates on California and Illinois, two other states that have continued in the forefront of progressive community technology policy and programs. Last winter-spring's issue featured Gabe Gloden's VISTA Profile of Chet Davis, and Angela Stuber and Gabe's "Lessons Learned from the Very First (but Definitely Not Last) Ohio Community Technology Day."

The Heart of its Altruism:

OCCN's VISTA Program in its Eighth Year

by Gabe Gloden

Over the past three years, I've witnessed remarkable evolutions in the community technology movement, and, as a VISTA, I'm usually carefully studying them from the perspective of a concerned, dedicated national service member. OCCN's vibrant and innovative Americorps*VISTA program, now in its eighth year, has given Ohio's CTCs an invaluable tool to enhance their services and inject a vitality into their programs that can only be generated by the genuine altruism of a VISTA who's paid next to nothing.

Spring '97 ComTechReview *featuring Ohio VISTAs: (l to r) Jill Weidner, Christy Lorente, Jennie Sethna, Willie Harris, Angie Adams, Heidi Lorash. Photo by Marsha McDevitt-Stredney.*

Many are familiar with the incredibly successful national CTC VISTA program, placing, on average, 40 members around the country every year, nearly 200 total since the beginning. Thanks to an existing, thriving CTC network, the first statewide organization of its kind, OCCN has been able to deliver a VISTA program of similar size to Ohio. The only statewide CTC VISTA program in the country, The OCCN VISTA Program began in 1997 with seven VISTA slots. It has evolved into a program hosting 20 VISTAs at any given time around the state. Due to its popularity and success, the VISTA grant from the Corporation for National Service has been renewed four times and, to date, 171 people have served as OCCN VISTAs.

OCCN VISTAs strengthen and expand current community technology centers and help create ones. The VISTAs do so by expanding open access programs, strengthening the organizational structure of the centers, researching additional resources for the centers, creating resources such as web pages and databases, creating and expanding training programs, and recruiting volunteers and users. Most of the VISTAs' activities involve developing resources to help sustain the centers.

An unforeseen byproduct that's a continuing asset to the movement: When I leave my VISTA position this year to pursue graduate studies, I'll be leaving as a community technology advocate for life. Other graduates of the program have followed similar paths and leave prepared to become concerned and active citizens in their community, with an experienced understanding of the importance of technology access and equality.

Paul Pitcher, an OCCN VISTA who served in Oberlin, recently moved to Guatemala and, working with Acción Cultural Guatemalteca, he is opening a new CTC along with his co-workers (see Paul's article about this work in this issue). "There are many reasons that I now make my home in Guatemala and that part of my work here is with computers and community technology," says Pitcher. "One of those reasons is my experience with OCCN and the VISTA program. Through that program I was able to find new footing and a whole new world emerged in front of me, that of community technology and its importance in today's society."

In 2001, Johanna Burgess began her CTC service through the VISTA Program with the Southern Perry Youth Arts and Media Center (SPiCYAM) in Shawnee, a small pocket of poverty in Appalachian Ohio. "Unfamiliar with the SPiCYAM and its programs, needless to say I was a little green when it came to understanding what was involved and the technology in general" Burgess recalls. "I came to appreciate OCCN's endeavors to close the technological gap that affects communities exactly like the one I would be working with. Things that I took for granted in bigger communities, like DSL and high speed Internet, weren't available in Shawnee."

Johanna's service inspired a new career path for her, as she went on to become the director of the Holland Center in Corning, a nearby Appalachian CTC and recent recipient of a CTCNet Youth Visions for Stronger Neighborhoods program grant. "In an area where poverty is the norm, it is gratifying to be involved with an organization that sees technology as the right of everyone, not just a select few," says Burgess.

As OCCN expands its definition of community technology, the OCCN VISTA Program will, in turn, rise to meet new technology needs in Ohio's under-served communities, harnessing the altruism of a new generation of VISTAs and expanding their own definitions of community service. ◆

Gabe Gloden serves as OCCN's VISTA Leader, currently in his third year of service. He also serves on the board of The Neighborhood Network, working to bring media production skills and access to the residents of Columbus.

"Bringing IT Home" with the Cleveland Housing Network

DeJuan Perrymond

Established in 1981, the mission of the Cleveland Housing Network is to generate hope, healthy market forces, and powerful pathways out of poverty for very low-income families, which is accomplished through the large-scale development of superior quality affordable housing, meaningful homeownership opportunities, and a critical array of comprehensive training and supportive services. This "beyond bricks and mortar" approach to community development includes CHN's Bringing IT Home Initiative. Bringing IT Home (BIH) trains low-income Clevelanders to become proficient in computer technology and financial literacy and provides graduates with an opportunity to purchase a subsidized home computer and build on their experience at the home.

Based on the framework of the 21st Century Workforce Commission's emphasis on applied information technology proficiency and training, and with the help of a second Technology Opportunities Program (TOP) grant from the Department of Commerce in 2002, CHN established the BIH to provide training in hardware, Microsoft Office, Email, and the Internet. BIH clients also take a series of financial literacy courses that emphasize basic money management, understanding and improving credit, and savings and investments. After classroom training, clients are eligible to purchase a new subsidized desktop PC with CHN paying half. To date, 150 more homes now have a new computers being used by more than 500 Clevelanders.

Not only do the tools acquired through BIH enhance employability, they also link clients to mainstream banking services that make it easier to manage personal finances. The combination of technology and financial literacy training helps clients integrate the use of ATMs, checking accounts, and online banking services including direct payroll deposit, bill payment, and e-filing taxes. The curriculum also teaches users to review credit reports, fill our loan applications (e.g., FAFSA), and use a spreadsheet to budget.

As a part of the project's rigorous data collection and program evaluation, CHN developed "ClassMate," an on-line tool to manage CTC activities and track outcomes, used daily by staff at CHN's Community Training and Technology Center to track their 5,000 plus clients who take classes and utilize its services. CHN continually makes revisions to the BIH model, modifies curriculum, and creates new course work in accordance with the outcomes measured. CHN most recently launched a "Get Checking" class, which is a first step in helping people get out of "ChexSystems" – which means they cannot open a bank account. In response to the enthusiasm of students who completed the BIH program wanted more, CHN partnered with Cuyahoga Community College to create its premier "Gateway" program. Picking up where Level II computer training leaves off, the Gateway program allows BIH students to take Level III – an actual for-credit college course - taught by college instructors, at the Training Center where they are comfortable.

Unfortunately, the elimination of TOP from the 2005 federal budget removes an important funding stream for the BIH program. Despite the loss of this program, TOP enabled CHN to develop a blue print that can be used to develop new partners and new funding streams for this important initiative. Currently, CHN is collaborating with an exciting array of community partners to develop a city wide "Beyond Bricks and Mortar" plan that will build on the BIH momentum to develop self-confident, money smart, and technologically trained homeowners who help stabilize Cleveland's community. ◆

DeJuan Perrymond is the Director of Information Technology at Cleveland Housing Network, Inc. where is responsible for the department's strategic planning, program and human resource development, community relations, program evaluation management and project budgeting.

Cleveland's TILI Learning Centers

Kris Carroll

In the last three years the Cuyahoga Community College (Tri-C) Technology and Information Literacy Initiative (TILI) Learning Centers have opened up in three inner-city Cleveland neighborhoods. The Tri-C TILI Centers are busy serving all ages from 10:00 am to 7:00 pm daily, with a focus on family literacy, GED, ABLE, K-12 tutoring, after-school programs, and basic computer classes.

The TILI Learning Centers are a collaboration between Cuyahoga Community College, Cleveland Municipal School District, and private multi-family property owners. Each Center serves a different neighborhood and has its own personality. The Rainbow Terrace Center opened first in late 2002 and is the largest of the three. The Arbor Park Learning Center, located a few blocks from the Tri-C Metro Campus, is filled to capacity almost everyday of the week with K-12th graders. And the newest addition, Park Village, opened in October of 2004 and serves the Hough neighborhood.

The heart of all the Learning Centers is the K-12 program. At three o'clock every afternoon students burst through the doors with homework and stories from school. Students get help with

TILI Learning Center

homework, assistance with special projects, and open-access computer time. The curriculum focuses on reading, writing, math, and information literacy. Learning Center staff collaborate with the teachers and parents on a regular basis to ensure students are focusing on the appropriate subjects and skills.

Family literacy and parent involvement are important aspects of the TILI program. Many parents have taken the opportunity to use open access times and to take free basic computer skills, GED and ABE classes. The GED classes have had a great success rate with Victoria Natsis as the lead teacher, and many adult students continue their education and enter programs at Tri-C after completing their degree. The Learning Center at Rainbow Terrace offers math tutoring for adults needing assistance with assessment tests or college classes.

Outside the regular school year, the Smarter Summer program focuses on preventing academic slippage and creating an environment where K-12 students organize their own projects. In 2004, the Rainbow Terrace Smarter Summer program operated a snack business, and with the profits they took a trip to the Six Flags Amusement Park. The Arbor Park Smarter Summer program is planning a play that they will put on for the other Learning Centers during the '05 summer program. ◆

Kris Carroll is the Cuyahoga Community College TILI Learning Centers Coordinator. She has a B.A. from John Carroll University and a MLIS from Kent State University.

CDBG-supported Programs at Toledo's Murchison Center

by James Moseby

The Community Development Block Grant (CDBG) program is one of the U.S. Department of Housing and Urban Development's oldest, administered in a variety of ways, federally, statewide, and locally. HUD CDBG funds are used primarily to "ensure decent affordable housing for all," and more generally to "provide services to the most vulnerable in our communities, create jobs and expand business opportunities." CTCs with education and workforce development experience are eligible for this support, and the Murchison Center in Toledo is a useful model of what can be done.

James Moseby

The Murchison Center is a fully capable community technology center with 20 connected workstations including printing and multi-media capability. Our mission is to educate and provide community support to alleviate the problems of underemployment, drug and alcohol abuse, and violence and to enhance the social and economic growth of the neighborhood residents in our service area. Founded by St. James Church in 1992, the Murchison Center first connected with the City to access CDBG funds in 1996, then with the University of Toledo in 1998. These key connections have allowed us to build many other partnerships and grow into a trusted institution in the neighborhood and citywide.

CDBG funds have enabled us to develop and sustain four major programs:

1. After school tutoring and computer classes—helping lower-income inner-city children (grades 2-12) with homework, providing math and reading tutoring, teaching computer skills.

2. Computer classes for adults—increasing computer literacy by covering basic computer hardware, word processing, email, and Internet searches and use.

3. First Saturday practice math proficiency testing—providing monthly sessions October through March at more than a dozen sites, where children take practice math proficiency tests at either 4th and 6th grade levels, developed by our volunteers and based closely on Ohio Department of Education standards.

4. Social cyberpower—helping our community overcome the digital divide by building web pages for religious institutions as community resource centers.

Find out more about these programs at the Murchison Center to see how they might be useful to your center's work. ◆

James Moseby, a University of Toledo graduate, has been a volunteer teaching Intro to Computers at the Murchison Center for the past five years.

Community Agency Integration at Cincinnati's Northwest CTC

Charley Flaig

Cincinnati's Northwest Community Technology Center, now in the third year of a three year grant from Verizon through the Ohio Community Computing Network (OCCN), has become the focal point of community activities. In important ways, this is due to its integration with other key community programs.

Kids at the Northwest CTC

The Northwest CTC is located in the Northwest Family Resource Center, an old elementary school building, that also houses the Northwest Branch of the Portsmouth Public Library, the Community Action Head Start Union Center, two of South Central Ohio Educational Service Center's Educational Disadvantaged units, a PreSchool Special Needs class, Scioto County Even Start, and the Scioto County ABLE/GED Program. The gymnasium is used daily for youth sports leagues, wedding receptions, fund raisers, reunions, and community meetings.

Thus, while children are at Biddy Basketball practice, parents utilize the CTC for a variety of purposes, mostly to access the Internet. The CTC works in conjunction with the library and Even Start on Family Fun Night activities. The library conducts classes for adults; Even Start provides activities for the very young to five year olds, while the CTC hosts the 6 to 15 year olds in various computer-related educational activities. The CTC is also the only avenue for some students to access the Northwest Local Schools Home Work On-Line program. In the summer, the CTC offers computer-assisted remediation and proficiency test refresher classes.

The CTC is the only location in Scioto, western Adams and southwestern Pike Counties where residents can make copies, use a fax machine, and access the world of the Internet at no cost. For adults, it's a key place for job search activities through the Scioto County Work Force Development initiative and the One Stop. It's at the CTC where residents can update and submit résumés and search for jobs locally and statewide through the State of Ohio's SCOTI on-line system. This service alone saves some residents over a thirty mile trip into Portsmouth.

All the above is possible through the cooperation and shared resources of the Northwest Family Resource Center partners. Scioto County ABLE manages the CTC and with Even Start cost shares the CTC personnel needs. The ABLE/GED program benefits from the CTC's computer lab and purchases equipment and supplies that are used by both. Utilities and upkeep are in-kind contributions from the Northwest Local School District. Special programs and activities costs are interwoven into the overall partners contributions.

The Northwest CTC is an excellent example of successful collaboration. ◆

Charley Flaig is the Director of the Scioto County Adult Basic and Literacy Education (ABLE) Program and oversees the Northwest CTC. A retired Air Force NonCommissioned Officer with 18 years in the Adult Basic Education business, Charley manages twelve ABLE sites throughout Scioto County.

Media Bridges Helps Bring E4Me Distance Education to Cincinnati

Gabe Gloden

When Tom Bishop, Executive Director of Media Bridges in Cincinnati, was presented with the opportunity to offer a free introductory course to online distance learning at the annual OCCN Conference last year, he jumped at the opportunity. "It just sounded like a great way to provide additional services at your CTC with low impact on your staff and financial resources," says Bishop. "I'm really surprised other centers haven't taken advantage of this program."

This is shocking indeed, considering the Ohio Learning Network's E4Me program is offering up to $1,000 a month to computer centers who agree to promote and facilitate the course as a gateway to gauge interest and acuity in distance learning.

By the end of the month-long course, participants should be able to understand how to be successful in an e-learning course, assess their technical skill level, define how their interests are linked to education choices and career paths, and plan their future steps with e-learning.

In addition to providing Media Bridges with the supplementary income for a facilitator, E4Me also conducts a savvy media campaign in the Cincinnati area, which includes several spots on local radio. In return, Media Bridges promotes the program on its website and on its local cable access stations.

"I heard the ads on the radio and decided to sign up," says E4Me student Marsha Smith. "Being 50 years old, I've been wanting to

go back to school and get a new job, but I don't have time to do anything but work."

More and more Americans are catching on, too. A U.S. Department of Education study released in 2003 found enrollment in college-level distance learning more than doubling (2.9 million) in 2001 since 1998. Without a proper follow-up study, it's anyone's guess as to how popular eLearning options are becoming.

"It's advantageous for those who are time and distance-challenged," explains Bishop. "But it shouldn't be considered an equal substitute for a classroom experience." That's why E4Me's introductory course has become so popular. For some, distance learning may not be the right educational choice. This course encourages prospective distance learning students to discover a potentially viable, virtual alternative to traditional education.

Over the course of the past three months, Media Bridges has seen its enrollment in the online intro course shoot from one to 26, with 17 of those participants poised to complete the course. Many of these students will go on to take the accredited courses offered through a large variety of Ohio colleges and universities.

Although Media Bridges offers its open computer lab to participants, it has yet to see "anyone come through the door" to take the course in person. With the proliferation of high-speed home connections, E4Me enables CTCs to expand their services beyond their physical space by providing facilitation and technical support to off-site students. ◆

Gabe Gloden serves as OCCN's VISTA Leader, currently in his third year of service. He is also serves on the board of The Neighborhood Network, working to bring media production skills and access to the residents of Columbus Ohio.

Workforce Investment at the Appalachian Center for Collaborative and Engaged Learning (ACCEL)

Gary Lambert

The Appalachian Center for Collaborative and Engaged Learning (ACCEL) in Zanesville benefits from extensive collaborations with schools in delivering its workforce development program. ACCEL's curriculum is designed to provide a virtual learning experience. To assess and provide guidance to students, the Mid-East Ohio Vocational School District provides a full-time career guidance counselor who administers an evaluation to assess what careers the students might want to explore, considering both career and academic interests and aptitudes, and also leads the students through the virtual career exploration. An industrial arts teacher then guides the students through the process of using the computers and corresponding industrial equipment.

With its Workforce Investment Act funding, ACCEL purchased a software package, CareerTEK, which provides the virtual learning experience in industrial technology, covering materials processing, weather forecasting and aerodynamics, and informational technology, including A+ Certification, I-Net+ (Internet technology) and Net+ (network administration) certification, and multimedia production. The industrial technology program involves 10 hours of virtual on-screen learning and 30 hours hands-on learning with industrial equipment.

In 1998, Congress passed the Workforce Investment Act (WIA) to strengthen the nation's workforce development system by streamlining and coordinating the delivery of multiple employment, education, and training programs. WIA places new emphasis on serving at-risk youth within comprehensive state and local workforce investment systems by establishing a single funding stream for youth services and activities.

Each state must allocate 85 percent of its WIA youth funds to local areas. The remaining 15 percent is reserved for statewide activities, including incentive grants, technical assistance projects, management information systems, and evaluations. Under currently law, at least 30 percent of WIA youth funds must be dedicated to out-of-school youth, a percentage that is expected to increase substantially when Congress reauthorizes WIA (for more on this and the legislation in general, see "Understanding the Workforce Investment Act"). To be effective, a workforce program must work with a wide array of organizations in its community. CTCs and schools can play invaluable roles in this. Using the ACCEL program as one of its two prime examples, America Connects provides useful resources on how to start a CTC youth employment program. ◆

Gary Lambert is the President of ACCEL and Executive Director of the Muskingum County Business Incubator with thirty years experience in engineering, executive and plant management. He serves as Vice President of The Ohio Community Computing Network (OCCN).

OCCN Assists ACCEL and Other Appalachian Ohio CTCS with Major Microsoft Software Donation

Angela Stuber

The Donation

In September 2004 the Ohio Community Computing Network (OCCN) began working with the Appalachian Regional Commission (ARC) regarding a potential Microsoft donation for CTCs in the Appalachian region of Ohio. This became a reality in November, when OCCN submitted the software donation applications for 18 CTCs valued at over $90,000. As of April 2005, a few of the CTCs had received their software and the rest were anxiously awaiting the delivery.

OCCN's assistance with the selection of sites in Ohio was just one piece of a larger one million dollar software donation for the 13-state Appalachian region. It was ARC's relationship with Microsoft that brought about the large software donation and OCCN's relationship with ARC that resulted in Appalachian Ohio CTCs being chosen as recipients in Ohio.

The Grantees

The CTCs using the donations to upgrade operating systems with XP, networking software and Microsoft Office include:

- Eight CTCs operated by the Appalachian Center for Collaborative and Engaged Learning (ACCEL) in Zanesville
- Two CTCs operated by the Appalachian Center for Economic Networks (ACEnet) in Athens
- Holland Community Technology Center in Corning
- Ohio State University Learning Center South in Piketon
- Ohio University Southern - TASC LAB in Ironton
- Four CTCs operated by the Coshocton County Resource Network

Leveraging Additional Resources

The Microsoft donation helped finalize a donation of 25 Dell computers from the Muskingum County Department of Job and Family Services to ACCEL. ACCEL has refurbished these computers by installing additional memory, Microsoft XP and Microsoft Office. The computers will be used to open two additional technology centers in Muskingum County.

Additional Donation

OCCN was recently informed by ARC that Microsoft had agreed to an additional $1million software donation for Appalachia. OCCN has begun the process of gathering applications within Ohio for our $100,000 portion. ◆

Angela Stuber is the OCCN Executive Director and CTCNet Board President.

Community Networking On The Night Shift, Part Six:

The Rise And Fall Of The Ohio Free-Nets

Anne McFarland

In 1986 when the Cleveland Free-Net went online, it was one of a small number of community networks across the United States. While most of the other networks were one of a kind, the founder of the Cleveland Free-Net envisioned other communities using the already successful Free-Net model as a springboard for development of their own networks.

To that end, Dr. Thomas M. Grundner, then of Case Western Reserve University, incorporated the National Public Telecomputing Network (NPTN) to serve as an umbrella organization for the Free-Nets. The NPTN Bluebook contained the blueprint for setting up a Free-Net (and the spelling and punctuation were to be exactly that). Eventually a fee was set for membership in NPTN.

My own involvement with the Free-Net model began when I met Tom Grundner in 1991. At the time I was the Associate Law Librarian at the University of Akron, and, as many librarians, concerned about the increasing divisions of the information society into haves and have-nots. In the law library world, the haves could use the costly information databases of Westlaw and Lexis. What, then, would happen to the solo practitioner who could not afford those prices? Moreover, what would happen to the citizen who wanted to research his own legal issues?

Tom Grundner was then writing a newsletter called *Letters to the Fourth World*, and when I read one, I realized that the Free-Nets were the answer to my questions. In turn, Tom was eager to have Akron involved to complete a northern Ohio group of Free-Nets that included the Medina County Free-Net, the Lake County Free-Net, the Lorain County Free-Net, and the Youngstown Free-Net. There were other Free-Nets across the state, including the SouthEastern Ohio Regional Free-Net (SEORF) in Athens, the Greater Columbus Free-Net (center), the Dayton Free-Net (southwest corner), and the Toledo Free-Net (northwest corner).

Where are those Free-Nets today? The Akron Regional Free-Net is now ACORN, run by the Akron-Summit County Public Library. The Youngstown Free-Net, almost a one-man labor of love of Lou Anscheutz, is gone. The Medina County Free-Net, once affiliated with the Medina County Library is gone, although I still have a Medina County Free-Net t-shirt. The Lake County Free-Net has a minimal presence. SEORF seems to be active but didn't respond to my email.

There doesn't seem to be a really good directory of Free-Nets; the Vancouver Community Network has a directory, Freenets Around the World, but many of the links are dead. John Kurilec maintains the Organization for Community Networks which also has a list of present and past Free-Nets. My favorite directory has been the one organized by the University of Michigan School of Information, but it has been down since last September with a note that the absence is due to database server issues.

Saddest of all, the Cleveland Free-Net went down in 1999. My personal opinion (and I have one degree from Case Western Reserve University) has always been that CWRU made a huge mistake by letting it go. The community used it, it was thriving, but the bureaucrats didn't have the vision to see what CWRU could contribute to the community through the Cleveland Free-Net.

And I have to admit that the surviving Ohio Free-Nets are pale imitations of what was once envisioned, including my beloved ACORN. It's a good community bulletin board, but it doesn't reach far beyond that. Now part of the Akron-Summit County Public Library's (ASCPL) resources, it is the library's gateway to the Internet.

And probably the saddest event of all was the spectacular demise of NPTN. It's a story with all the elements of a potboiler—pornography, carpetbaggers, betrayal, bankruptcy, lawsuits, a federal court sentence and people behaving badly when not illegally. It may make an interesting story at some future time.

Would the Ohio Free-Nets have survived if NPTN hadn't disintegrated? My guess is no. Not that many of them ever joined NPTN, which fell apart far short of its potential. My theory on the fall of the Ohio Free-Nets is pretty simplistic. The Free-Nets flourished in that period of time before ISPs became plentiful and the cost of Internet access became cheap. The Free-Nets *were* ISPs, and since they were rooted in communities, they reflected their communities. The early Free-Nets offered community information, often organized on NPTN's city buildings model—schoolhouse, civic center, courthouse, post office (email) and forums (Internet Relay Chat). The Lake County Free-Net has a very attractive city layout.

But the commercial ISPs bypass community, and community was the heart of the Free-Nets. The Free-Nets weren't merely ISPs. They were often affiliated with universities—CWRU, University of Akron, Youngstown State University, Lorain County Community College, Ohio State University, Ohio University, and the University of Toledo. Academics were among the early users of the Internet and eager to spread its benefits to nonacademics.

The Internet was different then, too, before spammers, before Instant Messaging, before every company had its online store. It was Brendan Kehoe's *Zen and the Art of the Internet*, among many other manuals and primers. It was netiquette and sharing. Deb Keller, one of the founders of ACORN, thinks that the Internet still is a place for communities of subject interest; it just isn't a place for geographical interest.

In a sense I'm still hoping to prove that wrong. My local community network, Cleveland Heights-University Heights Community Network, is pretty much a bulletin board, even though it has a forum component. But we have a shot at being part of a project that will involve a five-street, 380-house segment of the community. Will that be the critical mass for a community connection, or is my incurable optimism showing?

Anne S. McFarland, Esq. is a Research and Reference Librarian for the Cleveland Law Library Association and a regular contributor to CTR since 2001.

Spring 2004

- The Boston Earned Income Tax Credit Electronic Filing and Technology Access Project *by Joan Arches*
- The Third Age of Community Networking *by Andrew Cohill*
- The Next Wave: Community Information Hubs *by Paul Lamb and Vishant Shah*
- Closing the Books on ACORN—Well, Almost *by Anne McFarland*
- Growing Demand for Rural Broadband and the Growing Digital Network *by R. Terry McGhee*
- Telemedicine in Hawaii *by Kelley Withy et al.*
- Community Technology Leadership Development: The Case of Mountaintown *by Greg Laudeman*
- Addressing Gaps in Internet Content and Access: New Research, Guidelines, and Legislation *by Laurie Lipper and Wendy Lazarus*
- The CAN SPAM Act *by Robert Cannon*
- Ohio's Community Technology Day *by Angela Stuber*
- Interview with Chet Davis, Ohio VISTA *by Gabriel Gloden*
- Making VISTA Work in Austin *by Zafar Shah*
- Interactive Web Design for the Technically Uninclined *by Lisa Smith*
- CompuMentor on Providing TA to Nonprofits *by George Gundrey*

See the inside back cover for more information on back issues.

The Digital Divide Network — Impact and Meaning

Phil Shapiro

I was homeless until Friday, June 18, 2004. Not physically homeless. I was homeless in my career. The career I had chosen for myself, to be a technology access activist, was unrecognized and in some ways nonexistent.

And then I read an email message by Cedar Pruitt on the Digital Divide Network (DDN) email list. The message talked about plans to build an interactive DDN web site. Here are the opening sentences of that email:

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Date: Fri, 18 Jun 2004
From: Cedar Pruitt <CPruitt@EDC.ORG>
Subject: Seeking your articles and ideas
for the DDN re-launch

As we gear up to re-launch the Digital Divide Network
Web site this fall, we're focused on making it inter-
esting, engaging, and dynamic, and we need your input.
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In reading that email, I knew my life would be changed. I knew that the technology access movement was about to rocket into public view. What was previously a private discussion on an email list was going to be more of a public discussion on the web. And while reporters are good at ignoring private conversations, they're not so good at ignoring public conversations. Especially lively, dynamic, informative public conversations on issues of widespread public importance.

I breathed a sigh of relief when I read Cedar's email. The career I had chosen for myself would no longer live in the shadows. Quite the opposite. The technology access movement was about to build a fierce momentum.

Digital Divide Network Stats
(as of May 2005)

- Members: 7,224
- Countries represented: Approximately 130
- DDN Communities established: 91
- Total hits: approx. 685,000 in April
- Unique visitors: approx. 35,000
- Average visit length: 22 min, 30 seconds
- Discussion Board posts: 556
- Articles: 348
- Headlines: 700
- Events Listed: 120
- Blogs: 121
- DDN email list posts: 1,786 since site relaunch in December '05; over 10,000 in the last five years.

DNN Editor Cedar Pruitt and DDN Coordinator Andy Carvin

In November, when I was invited to view a beta version of the new DDN site, it didn't take long to realize how well-designed it was. The site had personal profiles, user-created communities, blogging, discussion boards, news headlines, and an event calendar. Everything that you could want was there. It had all been planned and thought out carefully. Andy Carvin and Cedar provided a useful overview of all its features in the January 2005 Community Technology Review. By that time, less than a month after the DDN site went public, a wiki was added for members to use for free.

Of all the features on the site, the one I find the most useful is the personal profiles. I have come to learn much from reading the narrative life journeys of my peers. While it's never easy to write free form about oneself, people on the DDN site have risen to the task. DDN profiles allow hyperlinking, so it's possible to link to external text, images and sites that expand your DDN profile.

A shiver went down my spine when I saw how the DDN blogging feature works. It works perfectly. While each person on the DDN site is given their own blog, you can read all the new blog postings with a click. It's like reading Slashdot, except many more of the blog postings are on topics of wider interest. If you find a particular blog posting engaging, you can easily browse through all the other postings by the same person by clicking on their blog link at the top right of the site (when you're on the blog reading page.) This is a fine way to track down kindred spirits. While reading a person's blog postings, see if there is a resonance of spirit. If so, you can easily dash off a message to them from the bottom of their DDN profile. You might also leave a supportive comment on any of their postings, or link to their posting from a DDN blog posting of your own.

Blogs rock. Why do they rock? Because it's totally fine to post a blog entry with just two or three sentences. You can do it the next time someone puts you on hold on the telephone. The company that put you on hold thinks you're listening to their terrible music, when in fact you're using your blog to share the most interesting ideas and observations with a worldwide audience.

And then the icing on the cake came in March, when the "Add Friends" feature went up on the DDN site. Now DDN members can easily link to one another, allowing circles of colleagues to intertwine. A fabric emerges. A social fabric.

Let me tell you a little more about how homeless I was in my career. In 1997 a Washington Post reporter was writing a profile article about Corliss Grimes, a revered educator and community builder in Washington, D.C. I had volunteered at Corliss' after

school tutorial program for eight years, so the reporter called me at home to get background info about her. The reporter wanted to list my name in the article, so she asked for my occupation. I explained in a friendly way, "I work as a technology access activist — it's a branch of civil rights activism."

"I can't write that," she replied matter-of-factly.

"Why not," I inquired politely and with some surprise.

"My editor won't let me," she replied.

I paused and then asked, "You let your editor tell you what's true and not true in this world?"

Today that reporter would have a more difficult time dismissing my work. She had no hesitation dismissing it back then. As of April, the Digital Divide Network web site had 6,700 members in 115 countries. The technology access movement is unstoppable both in growth and momentum. Are you a part of it? ◆

Phil Shapiro is a long-time community technology educator and advocate and contributor to the Community Technology Review. He can be reached though his Digital Divide Network profile.

Internet Telephone Service: A New Era of Competition in Telecommunications

Robert D. Atkinson

Voice over Internet Protocol (VoIP), or Internet telephony, promises an evolutionary leap beyond standard telephone service. Because VoIP is significantly different than circuit-switched telephony, it requires a new regulatory framework—a streamlined set of federal guidelines geared to the more competitive telephony marketplace enabled by VoIP. Government should not regulate prices, set market entry rules, or the like for Internet telephony as it did in the era of local monopolies. But it will still need to guarantee consumer protections and ensure that providers meet required social obligations.

Given that telecommunications remains one of the most regulated and taxed sectors of the economy, there are a host of public policy issues surrounding VoIP. This brief, based on a recent Public Policy Institute report "Internet Telephone Service: A New Era of Competition in Telecommunications" discusses VoIP providers' social obligations, particularly universal service and 911 access.

Universal Service

Perhaps the most contentious and high-stakes policy issue related to Internet telephony is the issue of universal service. There are two key issues: (1) should VoIP pay into the fund and (2) if so, what should the revenues be used for.

We believe that, for the foreseeable future, VoIP services that use the North American Numbering Plan to assign phone numbers should contribute to universal service funding—at least until most households are VoIP subscribers. However, the issue of timing and managing the transition to a fully packet-switched network is one that should be taken into consideration. When most Americans have switched to VoIP, these services will simply be another Internet application, like email. At that point, VoIP services should not be required to contribute to universal service. However, at that time, it may be appropriate to require that broadband services pay into the universal service fund, provided that the revenues are used to support the deployment of high-speed networks, and not the public switched telephone network (PSTN). Some argue that broadband services should pay into the fund today.[1] However, given that approximately 20 percent of the population has broadband, subjecting it to universal service obligations would increase the cost of broadband and reduce its growth rate.

While VoIP services that use the North American Numbering Plan should pay into the Universal Service Fund (USF), it is less clear on how they should contribute. The contribution could be based either on phone numbers (a fixed charge per phone number) or as a tax on the monthly bill. Each has its advantages and disadvantages. While a per-number approach is easy to administer, it could reduce the functionality inherent in VoIP, for instance, the ability to maintain multiple numbers on the same account. One solution would be to assess a lower USF fee on second numbers. A per-number approach might also allow some companies to avoid their fair share of taxes if they use one number with multiple extensions. However, the FCC could account for this by imposing some share of the standardized USF fee on each extension. The advantage of a monthly bill tax is that it is more progressive—higher-income households consume more telecom services—and it does not discriminate against households with multiple numbers. A major disadvantage is that it could be difficult to administrator, as determining the cost of VoIP services that come bundled with other services could be quite complex.

With regard to expenditures, any universal service payments made by VoIP services should go to supporting the build-out of broadband telecommunications, not to the PSTN. Using these revenues to support the 20th century circuit-switched network will only delay that transition to a robust, packet-switched broadband network for the 21st century. As former

FCC Commissioner Reed Hundt stated, this would be as if "government responded to Henry Ford's new invention of the automobile by discouraging the construction of roads and, instead, tax[ed] cars in order to subsidize canals and railroads."[2] However, given that the costs of VoIP services, not including broadband, do not differ by geography (while the costs of broadband services do) and given that VoIP services are likely to be extremely affordable, especially for fixed-calling service packages, there appears to be little reason to subsidize VoIP services, even for low-income households. To the extent that affordability is an issue, regulators could extend programs such as Lifeline and Link-up to VoIP users.

While VoIP is likely to be very affordable, the underlying broadband service can be more expensive and can vary by location. Yet, universal broadband service has important economic benefits for the nation—including fostering rural development, among others. As a result, VoIP universal service revenues should be used to support the deployment of broadband telecommunications, particularly higher-speed broadband, to high-cost areas. Regulators could decide how to allocate these funds on the basis of a reverse auction. Broadband providers would bid on serving customers in high-cost areas with the lowest price-per-customer bids qualifying to receive universal service subsidies.

Other Social Obligations

Telecommunications is a regulated industry and has been required to meet a number of social obligations, including offering 9-1-1 emergency services, providing access for the disabled, including deaf and blind people, and giving law enforcement proper and authorized access to telephone traffic. VoIP can meet all of these obligations and in some cases meet them even more effectively than circuit-switched telephony. For example, deaf users could read messages from the computers without the need for expensive TTY teletypewriter service. Blind users could use VoIP to enable them to make calls or other commands using voice prompts. However, it is not automatic that all VoIP services will provide access for disabled users. For example, some VoIP services may have too much latency to provide 100 percent accurate TTY services.[3]

With regard to 9-1-1, it may be difficult for emergency service providers to automatically identify the location of VoIP providers. Moreover, in some cases VoIP customers must take steps to establish 9-1-1 service. Given that some customers may not do this on their own, it will inevitably raise issues about whether VoIP providers should do more. In fact, the Texas Attorney General recently filed suit against VoIP provider Vonage for failing to warn customers about limits to its 911 emergency dialing service, after a customer tried unsuccessfully to dial 9-1-1 on her phone.

In spite of these limitations, VoIP could potentially provide greater 9-1-1 functionality than conventional circuit-switched telephony. For example, it is technically possible (although not available in the market yet) for subscribers to program their services to automatically send more comprehensive information to 9-1-1 emergency services providers, such as the person's medical records so that the ambulance has them before they arrive at the house.

The telecommunications industry is working on the 9-1-1 challenge.[4] The FCC should provide the industry with a reasonable period of time to develop an adequate 9-1-1 system before requiring compliance. Until then, providers should be required to inform consumers if their (VoIP) services do not offer 9-1-1 service comparable to their traditional service. ◆

[1] DSL providers are currently subject to paying into the universal service fund because it is classified as a telecommunication service.

[2] Hundt, Reed, "Reforming Telecom Policy for the Big Broadband Era: Why is Government Subsidizing the Old Networks When 'Big Broadband' is Inevitable and Optimal?" speech given to the New America Foundation, Dec. 2003, p. 2.

[3] Susan Breidenbach, "Getting Ready," Network World, 8-12-02.

[4] The Alliance for Telecommunications Industry Solutions is joining forces with the National Emergency Number Association to form a committee that will develop a plan to give Internet telephone users access to emergency 9-1-1 services. One likely solution is to tie location information to the broadband modem being used, so that emergency service providers would know what modem a caller is using. Many residential VoIP services already feature a traditional E9-1-1 service, which provides a location and call-back number automatically to the call taker.

Robert Atkinson is Vice President of the Progressive Policy Institute and director of its Technology and New Economy Project. He is also author of The Past and Future of America's Economy: Long Waves of Innovation that Power Cycles of Growth (Edward Elgar Press, 2005).

Universal Service Policies Must Keep Pace with Advancements in Our Telecommunications Networks

Daniel B. Phythyon

As Robert Atkinson's article explains, Voice over Internet Protocol (VoIP) services are delivering not only a host of exciting new communications options for consumers, but also some thorny challenges for our nation's telecommunications policymakers. The Alliance for Public Technology (APT) is a nonprofit organization that works to foster public policies that ensure access to advanced telecommunications technologies for all Americans. Thus, APT has a strong stake in making certain that as our nation's telecom laws are modernized to reflect the explosion of new voice, video and data applications on IP-enabled broadband networks, policies will remain in place to promote universal access to these networks at affordable prices.

Our country's Universal Service programs are only one part of the current policy framework that is being buffeted by these new technologies, but they are among its most important elements. The Communications Act was drafted more than 70 years ago, when advanced digital technologies, laptop computers, and the Internet existed only in the realm of science fiction. As Congress goes about the process of modernizing the Act to reflect the world of IP-enabled networks, however, it surely will adhere to the goals it set out in 1934: "to make available, so far as possible, to all the people of the United States...a rapid, efficient, Nation-wide, and world-wide...communication service with adequate facilities at reasonable charges...." While the need to update our Universal Service programs raises a long list of complex and politically difficult issues, Atkinson rightly notes that they boil down to two principle questions: who should pay, and what should these funds be used for?

Universal Service Fund (USF) Contributions

On the contributions side, APT and a broad alliance of public interest groups have called for policies that require VoIP providers to contribute to Universal Service funds, so that all Americans continue to have affordable access to telecommunications services (see the Coalition's complete set of VoIP Principles). APT supports the rapid, ubiquitous deployment of broadband networks, but the public switched telecommunications network will continue to be the backbone of communications for a majority of Americans for some time to come. As more customers migrate to IP technologies, however, the pool of available revenues that is assessed to support Universal Service programs is declining. Unless revenue from IP services also is tapped for such assessments, Universal Service will be weakened.

USF Expenditures

On the expenditures side, we do need to shift our Universal Service programs from their traditional purpose of maintaining affordable access to legacy switched telephone services, to supporting the deployment of advanced telecommunications networks in all regions of our nation and all segments of our society. Here the challenge will be to accomplish this transition without jeopardizing the consumers who remain dependent on legacy telephone services, especially in rural areas and other high-cost regions where the deployment of broadband networks is likely to be more costly and difficult.

USF and Access to Broadband Networks by People with Disabilities

To ensure that people with disabilities have access to advanced, IP-enabled services, additional reforms will needed to both the contributions and expenditures sides of Universal Service programs. For example, only traditional carriers are currently required to contribute to the funds that support telecommunications relay services. Contributions from IP-enabled services will be needed to sustain the viability of those services, and to distribute their costs fairly. On the expenditures side, USF support should be made available to defray the costs of IP services and specialized communications devices that may be required by people with disabilities. (For more detail on these issues, see the recent congressional testimony of APT Board member Karen Peltz Strauss.)

Conclusion

In the 21st century, access to advanced telecommunications technologies and services will be fundamental to effective communication, quality of life, and democratic participation. Universal, high speed communications networks can bring better and more affordable health care to all citizens; expand educational opportunities for lifelong learning; enable independent living for senior citizens and people with disabilities; create opportunities for jobs, economic advancement and financial independence; make government more responsive to all citizens; simplify accessibility to communications media; and, reduce inequities caused by geographic isolation of rural communities.

Our collective challenge is to develop a new policy framework that will promote the deployment of advanced networks in a way that captures their benefits for *all* Americans. ◆

Daniel B. Phythyon is Public Policy Director-General Counsel for the Alliance for Public Technology (APT) in Washington, D.C.

The Foundation of Community Information Technology:

Community-Based Research

Randy Stoecker

Learning Early Lessons

In 1995, the early days of the Internet, a group of us were planning a statewide project in Ohio to assess the computer and Internet capacity of community organizations. In preparation for the project we spoke with one of the early Internet gurus at the time, Terry Grunwald, now of Making the Net Work, who advised us "don't let the technology drive the project." We heeded that advice and focused our efforts on understanding the information needs of those organizations along with assessing their technological capacity.

We also used a research methodology that, at the time, was not very well known in the U.S. That methodology was called "participatory research" or "participatory action research." It is now often called "community-based research" or "community-based participatory research." The idea was to involve the organizations themselves in the design of the research so that the results would be directly useful to them. It was an interesting process and helped build an organization called CATNeT—the Coalition to Access Technology and Networking in Toledo.

We started to learn a few lessons about community information technology back then: use the project to build face-to-face relationships; focus on people's information needs; use the research to guide the implementation. The lessons were also being learned in other places—most notably the participatory design conferences organized by Computer Professionals for Social Responsibility.

Forgetting

But then we got sidetracked. Programs like TIIAP—the Technology and Information Infrastructure Assistance Program—even when they talked about the community as the focus, nonetheless emphasized technology as the intervention. The availability of such funding encouraged organizations to look at problems as needing technology interventions rather than creating community development interventions that had technology components. The difference may seem subtle, but can be huge. For it encourages people to focus on developing the solution more than understanding the problem. Consider the example of the development of a high tech surveillance system for a sheep ranch to protect against predators, when the best intervention may be a couple of good herd dogs. Organizations like Techsoup, Making The Net Work, NPower, and others all started emphasizing the technology. Look up the tools offered by any of those organizations. You will find a lot to help you assess and maintain your software and hardware, but very little, with the possible of The Organizers' Collaborative, that helps you understand your information needs, and even less that helps you understand your community context. What these funders and technical assistance providers know about is technology. They do not know community development theory, or even information models in many cases.

In 2005, then, we not only haven't learned the lessons, but we keep repeating the same mistakes. And we are seeing the results: the demise of TIIAP and its offspring, the Technology Opportunities Program; the accumulating stories of failed community technology projects that became so numerous they motivated an international symposium on Sustainability and Community Technology in Prato, Italy last year.

Of course we have to lay blame on government policy for making it so hard to succeed. But we need to take the blame ourselves for allowing such a policy to prevail. And, maybe, we shouldn't even look with such fondness on those old programs. Because maybe they were flawed policy, too. The goal is not to get people access to computers. It is to get people access to power. Computers are very useful toward meeting that goal. But so are skilled community organizers, research and strategic planning facilitators, stable community organizations with meeting rooms, and daycare providers so people can attend the meetings in those meeting rooms.

Community First, Information Second, Technology Third

So when we talk about community information technology or CIT, we have to talk about community and information and technology—together. What does it mean to talk about community? Well, if you are doing a community information technology project in a neighborhood, it is more important to know how many doors you need to knock on and how many reminder phone calls you have to make to get 100 people to a planning meeting than it is to know how many megabytes of RAM you need in a lab computer. It is also a lot more difficult to get those people than it is to get the RAM. Yes, we can build it and they will come. But that's all they will do. They won't help us pay for it, or maintain it, or celebrate it, or defend it, if we haven't built the face-to-face relationships along the way.

To know how to get those people involved we need to understand their "community." But first, we need to understand the word "community" to begin with. It may be the most abused word in our language. When I teach community organizing, or community informatics, and I ask my students what a "community" is, they default to "any group can be a community." We have no standards to distinguish a healthy community from a bunch of people occupying the same space. A simple standard: a healthy community is one where people know and trust each other across multiple roles: their family roles, their work roles, their consumer roles, their service roles, their resident roles, and others. And yes, that excludes sports groups, special interest groups, and the "virtual community"

(unless we really do take virtual to mean "not actual"). Those groups are all important, but they are not communities.

Once we understand the community, and bring people together toward the goal of strengthening the community, we begin to emphasize information. Because we start with the question—what do community members want to do to improve their community, and what information do they need to do it? Do they need databases, or census statistics, or pollution measures, or lead paint assessments, or crime stats, or community asset information, or any of a myriad of other pieces of information?

Then, and only then, does technology enter the picture. Maybe technology is needed to get the information, or to manage it once it is gotten. Maybe technology becomes part of the intervention, perhaps even to help build community relationships. It is a crucial component of any community change process, but it is the third component.

Community-Based Research as Foundation

How do we know what the community wants, or what information it needs, or what technology infrastructure is appropriate? Here is where we invoke community-based research, or CBR. Think of it as a framework or foundation to answer all these questions. In a recent book that Kerry Strand, Sam Marullo, Nick Cutforth, Pat Donohue and I wrote, we said there were three principles to CBR. The first principle is that CBR is collaborative—it is about democratizing the research process so that the research questions, methods, analyses, and outcomes are directly influenced by the constituency they are designed to affect. The second principle is that CBR validates many forms of knowledge, from oral folk wisdom to scientific experiments, and thus requires new ways of integrating that knowledge. The third principle is that CBR's purpose is social change, both in changing the conditions that prevent the full realization of community and in changing the conditions of information control so that community members are able to take more and more control over defining, sorting, and producing information.

The CBR process then starts with asking the community "What do you want to do?" Then it asks "What information do you need to do it?" Now there are many cases where what the community wants to do, and the information it needs to do it, require little to no technology. In those cases, those of us whose only skills are in community information technology will find ourselves working in the background, at most. In other cases we may see technology interventions that community members do not, and it is not only appropriate but our obligation to offer those options.

Let's consider a CBR-CIT process, then, as:

> *…building community relationships by focusing research on the community's information needs, combining appropriate technologies with other interventions to maximize the community's information power and aid in the accomplishment of community goals.*

What does this mean in practice?

> ***…building community relationships…***

One of the things we did right when we organized CATNeT out of two CBR projects almost a decade ago was to use the CBR process as a lengthy planning process, bringing together residents of publicly-supported housing with professionals and resource providers in the community. We quickly noticed that one of the best outcomes of the project was the relationships that grew among the couple of dozen people who were involved in that planning process. In some cases those relationships led to residents and outsiders getting new jobs and learning new skills. In other cases they led to enduring friendships. And when the going got rough and CATNeT's funding declined, it was those relationships, and the commitment they engendered, that brought the organization through the tough times.

> ***…by focusing research on the community's information needs…***

I recently worked with another community information technology project in Toledo to help community organizations assess their computer needs and assets, which was followed by a training series focusing on information technology. It was a nice project, but I noticed that what the organizations really needed to do was assess their information needs and assets so they could figure out what they would use information technology for. So last year we brought together a group of organizations to coordinate just such an assessment, which opened our and their eyes to the amazing contradiction of just how many organizations are both information overloaded and information poor at the same time.

> ***...combining appropriate technologies with other interventions…***

I have had the good fortune to be invited to learn about and help with a number of community information technology projects in Australia, which is a world leader in the field. In one recent project working with neighborhood organizations, we tried to take to heart the importance of looking at information needs rather than just technology needs. It was enlightening. Many of these organizations run community education classes in everything from knitting to computers. And they need to get the word out to thousands of neighborhood residents. One of our first impulses was to think of databases and e-mail lists and fancy web pages. But instead we continued listening, and heard the staff's message that such electronic interventions would be both impractical and unsuccessful in places where very few people had Internet access. The appropriate technology many of these organizations needed was good shoe leather, and volunteers to fill the shoes made from that leather, to drop flyers off door to door in the neighborhood, along with halfway decent software to produce the flyers, of course.

> ***…to maximize the community's information power…***

The community organization information needs assessment mentioned above, which found that the organizations were both information poor and overloaded with information, led

us to consider the power dimension of information. What we learned was that many organizations were collecting information because funders were telling them to, not because they were ever going to use it. At the same time, they lacked the power to collect information they would use because they lacked the skills and time. So we are now in the process of designing a training series to help organization staff decide what information they need, how to gather it, and how to use it to their advantage. And among the things the organizations said they wanted as part of that series is training in spreadsheet software. We are also working to develop a set of easy to use databases for neighborhood organizations, such as building census tables that follow neighborhood boundaries rather than census tract boundaries so the organizations don't have to estimate or add up all those block group statistics by hand.

…and aid in the accomplishment of community goals.

A couple of years ago I facilitated an evaluation of one neighborhood's community development and crime prevention program. We used a CBR process, asking them what questions they wanted to answer and what they thought the best methods were for answering them. We also brought data back to them to get their interpretations to include in the report. The goal of the evaluation, of course, was to help them determine what changes they may want to make to do the best job possible of reducing crime, building housing, and filling commercial storefronts. One of their concerns was whether crime was associated with clusters of rental housing, which would allow them to concentrate community policing resources more effectively. So we did some computer mapping, using geographic information systems (GIS) software, and discovered that rental housing was spread throughout the neighborhood, and thus community policing would have to be spread out, too. We did find, however, that there were crime clusters on a number of corners, which confirmed residents' perceptions and could allow for more targeted policing. That required high end hardware, software, databases, and skills. But the most important thing we did required, once again, the technology of good shoe leather, as we walked surveys to every house in the neighborhood. And the single most important thing we learned from those surveys was that residents saw crime as staying the same or even getting worse in the neighborhood, contrary to the actual statistics that showed crime decreasing by 25% or even more. The goal of the program was not just to reduce crime but also to increase pride, and the survey results led them to redouble their efforts toward the pride goal.

Ten Years From Now

What will happen in the next ten years? Will we have learned the lesson that the technology is third? Will we have learned the community organizing skills that are essential to the long-term success of any community information technology project? Will we have developed tools to help communities assess their information needs rather than only their technology needs?

If I have anything to say about it, we will. My recent book, Research Methods for Community Change, tries to set the stage for making CBR an integral part of any community change process. [Editors note: Research Methods for Community Change is reviewed elsewhere in this issue.] Its lessons apply equally well to community information technology or any other issue because it emphasizes community change as the most important goal. Any community change process starts with diagnosing some condition, which often requires some kind of needs or assets assessment. That leads to a prescription, which often requires policy research or comparative research on different kinds of interventions. You then implement the prescription, and evaluate it, again requiring research.

In a community information technology project, perhaps some community members want a community technology center. The diagnostic stage involves finding out how many people would use a center and what nearby centers already exist. The prescription stage, if it is clear a need exists, then might involve researching various options for establishing a center, and researching the feasibility of various locations. The implementation stage involves actually creating and opening the center. The evaluation stage involves collecting data to find out the extent to which the center is meeting the goals set for it. If done with a community-based approach, all of these research tasks present opportunities to bring together a wide range of people to build relationships, develop skills, create a sense of community ownership, and consequently contribute to the ultimate success of the project. Because the research doesn't just inform the process. It also builds the community. And it focuses community information technology on building the community too. ◆

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America Connects Online Panel on Research and Community Technology Programs

Teresa Lara-Meloy

Where is the research on CTCs and who's conducting it? Does the available research speak directly to CTC practitioners? What kind of data should we collect with/about/in CTCs? These and similar questions drove the "Bridging CTC Research and Practice" online discussion hosted by the America Connects Consortium March 7-25, 2005.

The online panel opened with presentations by leading community technology researchers and practitioners, including:

- Laura Jeffers, Senior Research Associate at EDC's Center for Children and Technology (CCT)
- Peter Dowrick and JoAnn Yuen, Co-Pis in the Center on Disability Studies at the University of Hawaii
- Lisa Servon, Associate Professor of Urban Policy and Acting Director of the Community Development Research Center (CDRC) at the Milano Graduate School of Management and Urban Policy at the New School University
- Andrew Sears, Executive Director of TechMission
- Bill Penuel, Senior Education Researcher at Center for Technology in Learning, SRI International
- Glynda Hull, Professor, Graduate School of Education, University of California, Berkeley
- Jennifer Bryan, Manager of Research at BCT Partners

While the topics of discussion ranged over many important issues, the main discussions centered around four themes: 1) finding research on/for CTCs, 2) the role of research in CTCs, 3) the importance of quantitative and qualitative data, and 4) recommendations for future action.

In response to subscriber queries about where to find research on CTCs, technology and learning, and technology and academic achievement, the panel agreed that there needs to be a lot more research done in these areas and that there is no one central repository that houses research related to CTCs. ACC is planning to update its Research section to address this need.

Panelists and subscribers alike emphasized that research on and for CTCs should be relevant and useful to both community technology practitioners and the communities they serve, what Peter Dowrick identified as a "community responsive" model of research. CTCs (and CTC researchers) collecting and documenting best practices was discussed as being especially helpful to the field. On the role of research at a meta-level, panel participants pointed out that in addition to providing evidence of achievements to funders, research also has the potential and (arguably) the responsibility to affect policy.

Finally, the discussion developed into a healthy exchange about the merits of qualitative and quantitative data and converged on the idea that mixed methods were a happy medium, where quantitative data has a role in persuading the larger stakeholders about the impact of CTC work and qualitative data has a role in understanding what, how, and why CTCs work.

In addition to the panel archives, America Connects has compiled a summary of the "Bridging CTC Research and Practice Panel" that includes links to the panelists, the posts organized by theme, and a list of resources about the topic. ◆

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Summer 2004

Special conference issue with departments and articles designed to inform workshop tracks and presentations.

- Emergence, Convergence, and Empowerment *by Daniel Schackman*
- Spotlight: Lisa J. Servon
- Staffing for Sustainability: CTCs in Cleveland *by Jassen R. Tawil*
- Spotlight: Mercedes Soto
- Youth Engagement in Evaluation and Research *by Leslie Goodyear*
- Spotlight: Laura Breeden
- Community Technology Policy Actions at the State Level *by Angela Stuber*
- Policy & Advocacy Resources
- Spotlight: David Keyes
- Know Your Rights: Digitally Connecting CTC Users to the Law and Legal Resources *by Allison McDermott*
- Spotlight: Paul Lamb
- Cool Tools, Affordable Access *by Daniel Schackman*
- Spotlight: Dirk Koning

See the inside back cover for more information on back issues.

An Update on Digital Divide Research

Mary Stansbury

The Digital Divide is a slippery fish but trying to grasp its complex and dynamic nature is absolutely critical to finding solutions. National level studies and those covering particular regions, states, and communities teach us to avoid a "one-size-fits-all" understanding of the Digital Divide. For example, Ohio is both bellwether *and* exceptional. Ohio has often been called "bellwether" because of the representative features of the state's population. As Eric Rademacher, CoDirector of Public Polling at the Institute for Policy Research at the University of Cincinnati said, "You have a wide variety of viewpoints from extreme conservatism to extreme liberalism, a wide array of socioeconomic segments and of sectors." Ohio is also exceptional because of economic and social conditions that frequently put it in the lowest tiers of achievement; at the same time, Ohio has some of the most exemplary public libraries and CTCs in the nation.

Recent studies show us that there continues to be an alarming Access Divide along racial, income, and education lines. In a national study of low-income adults I conducted with Karen Mossberger and Caroline Tolbert, we found evidence to reaffirm that those with low-income or little education were much less likely to have Internet access at home than those of higher income or education and that African Americans and Latinos were much less likely to have this than Whites. These trends are also confirmed by US Census data, collected in 2001, and the monthly tracking survey conducted by the Pew Internet & American Life Project.

While a lack of access continues to be an important feature of the Digital Divide, we now think of the Digital Divide as much more than a gap in access to information and communication technologies (ICT). In addition to the persistent Access Divide, there is a growing body of evidence related to a divide of ICT skills and use. And many studies go beyond the descriptive and try to answer the "so what?" sorts of questions that cross practice and research community lines as well as lines of academic disciplines and even social values.

E-government is an area of interest for many researchers and advocates, for example. The Pew Internet & American Life Project reports that 54% of all Americans contact the government for some reason during a typical year but 72% of Internet users are more likely to do this than those who are not Internet users. Most people (42%) use the telephone to make contact, while 29% visit websites, and 18% use e-mail.

There is also a great deal of interest, activity, and funding opportunities related to developing electronic health products and programs. One of the objectives of *Healthy People 2010*, sponsored by the U.S. Department of Health and Human Services with programs and projects at many levels, is to see that individuals and health care providers "use information strategically to improve health." Internet access and information literacy skills necessary to find, evaluate, and use health information are included in the goals of *Healthy People 2010*, and studies in this arena over the last few years provide another source of supporting evidence for the Digital Divide, one that, in fact, shows growing inequalities in accessing basic life resources. "[R]esearch indicates that even after targeted health communication interventions, low-education and low-income groups remain less knowledgeable and less likely to change behavior than higher education and income groups, which creates a knowledge gap and leaves some people chronically

(Sample: Adults 18+)	Children's Partnership 2003	Pew Internet & American Life 2005	US Census 2001	Mossberger, Tolbert, & Stansbury 2003
Own Home Computer	57%		56.3%	57%
Internet Access	51%	66%	50.4%	50%

	Own Home Computer	Internet Access	
Race/Ethnicity	US Census 2001	US Census 2001	Pew 2005
White	58.5%	52.7%	--
White Not Hispanic	60.9%	55.2%	68%
Black	37.3%	31.1%	51%
Asian/Pacific Islander	72.3%	67.5%	
Hispanic of Any Race	40.0%	32.2%	63%
Education			
Less than High School Graduate	23.3%	18.0%	32%
High School Graduate or GED	46.4%	39.7%	--
Some college or associate degree	64.5%	57.7%	80%
Bachelor's degree	78.4%	73.8%	--
Advanced degree	82.2%	77.7%	88%
Income			
Less than $15K	28.0%	20.6%	--
Less than $30K	41.2%	30.8%	48%
$30 - $50K	65.4%	57.0%	69%
$50 - $75K	76.8%	72.7%	84%
$75K or more	90.8%	87.0%	92%

From Pew Internet & American Life Survey, March-May 2003 Data Set (http://www.pewinternet.org/datasets.asp)	Ohio	All Other States
Uses a computer at your workplace, at school, at home, or anywhere else on at least an occasional basis	64.5%	68.3%
Goes online to access the Internet or WWW or to send and receive e-mail	59.3%	60.8%
Has had access to the Internet for 5 years or more	34.0%	38.4%
Goes online from work	8.7%	14.9%

uninformed." (From *Healthy People 2010, Chapter 11* citing Freimuth, V.S. "The Chronically Uninformed: Closing the Knowledge Gap in Health," in Ray, E.B., and Donohew, L., eds. *Communication and Health: Systems and Applications*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1990.)

Keeping these national trends and descriptions in mind, we can now look at Ohio and see where the national and state pictures overlap and where they diverge. According to Quick Facts from the U.S. Census Bureau (http://quickfacts.census.gov), Ohio is currently experiencing special economic difficulties, as attested to by a state unemployment rate of 5.9% for January 2005, as compared to the national rate of 5.4%. Regionally, only Michigan is higher at 7.1%. Regarding education and its relationship to attracting jobs and industries and keeping people in the state, only 21.1% of Ohio's population older than 25 years has a Bachelor's degree or higher, compared to 24.4% nationally.

Data from Ohio for the Pew Internet & American Life Project studies show a notably lower degree of computer use in work, school and home and Internet access than in other states.

Given all these considerations, it is reasonable to urge Ohio to continue to pay close attention to the Digital Divide. ◆

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New Immigrants and Internet Use: Crossing Borders for Social and Cultural Benefit

Corry Bregendahl and Cornelia Flora

New immigrant groups are among the many without easy or common access to high-speed Internet, having limited personal as well as public access. In this article, we identify a few of the barriers new immigrants face in accessing and using the Internet, and suggest ways staff at CTCs can design and deliver technology programs to improve their quality of life and life opportunities.

The Effect of Poverty and Public Housing on Technology Access and Use

New immigrant families are experiencing poverty at higher rates than the native-born population. According to 2000 Census statistics, 19.4 percent of non-citizens live in poverty, compared to 8.3 percent of the native-born population. This disparity is linked to higher rates of under-employment. "Although immigrants represent roughly 11 percent of the total U.S. population, they make up a … larger share of the low-wage labor market (20%)" (Nightingale and Fix, 2004: 53). Constrained in the financial resources for purchase for their children—including Internet access and equipment (Hernandez, 2004)—like many low-income families, immigrants turn to CTCs for Internet access (Moore et al, 2002).

About the Project

County Cooperative Extension Offices, and sites where they are partnering, are joining an increasingly diversified list of CTCs in expanding efforts to offer technology-based services to underserved groups. The Advanced Internet Satellite Extension Project (AISEP), funded by the National Science Foundation, is a major resouce in this effort. Administered by the American Distance Education Consortium (ADEC) with public and private sector partners (Internet2 and Tachyon, Inc.), this ongoing research and development project has brought high-speed Internet access and support to 60 public learning centers nationwide at little or no cost to them from 2001 to 2005. The North Central Regional Center for Rural Development is evaluating the impact high-speed Internet access is having on participating sites and community partners. So far, we have written four reports on our findings and are continuing to conduct research for the project.

For this article, we report results from interviews with site facilitators at three new immigrant-serving sites—administrators, educators, program coordinators, technicians, and others who provide an array of services to support use of the high-speed Internet. Facilitators have specialized knowledge as a result of managing and using the connectivity for educational, training, administrative, community development, and other purposes. We interviewed facilitators at the following CTCs:

- The Salishan Learning Center (SLC), operated by Washington State University Cooperative Extension in cooperation with the Tacoma Housing Authority, located in an inner-city public housing development and serving a diverse population of low-

income, mostly new immigrant residents from Southeast Asia and former Eastern Bloc countries.

- The Marsing Resource Center (MRC) in rural Marsing, Idaho, operating on a shoestring budget from a variety of grants to serve Spanish-speaking immigrant Latino populations among others. University of Idaho Cooperative Extension is a crucial partner and provides staff support for technology programs offered at the MRC.
- The Lexington Public Library (LPL) in rural Nebraska, cooperating with the local County Extension office to provide Internet access and programming for Spanish-speaking new immigrant Latino populations and others.

Issues Facilitators Raise about Building Technology Assets of New Immigrants

What can CTCs do to build the technology skills of new immigrants? Facilitators we interviewed say new immigrants' quality of life and life opportunities can best be enhanced by supporting their access to and use of technology in the following ways.

Providing High-Speed Access and Use in Public Housing Developments

According to the Census Bureau, 60 percent of non-citizens rent housing units compared to 20 percent of native-born citizens. Many new immigrants—especially involuntary immigrants or refugees and even seasonal transnationals—live in temporary and/or subsidized housing typically lacking Internet access. Yet there is a lack of agreement among policy-makers as to what extent the public sector should be responsible for providing technology and Internet resources, and if technology is a housing luxury or a necessity. Even if policy hurdles can be cleared, formidable construction challenges exist, especially with in older, decaying structures. Private developers and federal and local housing authorities need to be persuaded to provide basic infrastructure as well as program support.

Building Trust in Authority

Facilitators mentioned that some new immigrants bring with them distrust of authority figures as a result of harrowing experiences in their homelands. "Many of [the groups] do not trust anything that has to do with government." The involvement of public sector partners in CTC programming can therefore pose its own set of problems. For instance, the network at one site in the project went down for several days, and new immigrant users who routinely experienced marginalization interpreted this as a pretext for denying them access to services. Said one site facilitator, "We had some people that thought we were lying to them [about the technical problems] and that we were [using it as an excuse] to deny them access to the Internet."

Minimizing staff turnover and developing responsive resident services are good general management principles and can help build trust with users over the long term and mitigate this situation in particular.

Embracing New Immigrant Cultures and Identities

Facilitators said CTC staff cultural and social sensitivity, together with flexibility, are key elements for delivering effective programs. CTC staff who can communicate in users' native languages and who encourage peer, shared, and familial learning in order to reach these groups are preferable to having intimidating situations with individuals at unshared workstations trying to learn from virtual strangers.

Fisher et al (2004) report that new immigrants maintain language and culture ties to cope with life in a new country. Offering programs that train and help users to access the Internet for recreational and personal use that involves them with family members, friends, and culture in their native country can help new immigrants maintain important social and cultural connections, while at the same time building their computer skills and trust in CTC staff.

Documenting Results

Site facilitators with whom we spoke have difficulty gauging the financial and other benefits new immigrants accrue from using the Internet at CTCs, in part because their CTCs lack funding for this purpose and also because highly mobile users who move and/or get a job are especially difficult to track. Yet for CTCs, showing positive impacts of their efforts is critical for securing support in the future. Measuring financial gains in the form of a new job or increased wages as a result of acquiring new technology skills, showing how users make new professional and personal connections, maintain old connections, adjust to life in a new country, and build confidence—all of this can be documented by conducting brief but pointed conversations with

Marsing Resource Center

users. This can provide CTC staff a wealth of information to help justify and secure technology funding for the future.

The Advanced Internet Satellite Extension Project is drawing to a close. Sites no longer receiving the AISEP subsidy are finding ways to justify continued access to high-speed Internet in cooperation with county government and partnerships with community-based organizations. The AISEP achieved its technical mission of bringing affordable, high-speed Internet access to underserved sites across the country. The project also demonstrated that while Internet access offers people on the margins possibilities, attendant investments in policy and programming are needed to help CTCs and the people they serve turn those possibilities into probabilities. ◆

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Community Technology, Guatemalan Style

Paul Pitcher

There is no short job description of my current work at Acción Cultural Guatemalteca (ACG), a small non-profit community and cultural development organization made up of entirely indigenous Mayans based in Santa Cruz del Quiché, Guatemala.

Every time someone asks me what I do, it takes me at least 5 minutes and a few small stories to attempt to relate my variety of tasks. In many ways, it reminds of me of my work as a community technology VISTA in Ohio at The Bridge, Oberlin's Community Technology Center, where I joked with my boss that my job description was "Just doing anything that needed to be done." In the same vein, one of the many assignments that was waiting for me when I walked into the ACG office a little over a year ago was that of computer technician, computer teacher, and web designer—and that's only a small part of it. ACG serves the indigenous Guatemalan population through projects involving micro-credit, educational scholarships, improved stoves, HAM radios, training in traditional weaving, animal breeding and care, just to name a few of them, in 36 communities all over the countryside. I spend many of my days on the road meeting with villagers, working with doctors, setting up solar-powered HAM radios, leading delegations, translating from one language to another (both Spanish and K'iche', the local Mayan language). The key is the ability to provide the technology that ACG recognizes is necessary for all of its members to have the opportunity to learn in order to advance in the world and to be able to put the teaching of this "computer language" into a language that they can understand. It requires me to, sometimes, go a little off the beaten path in order to provide these services.

One-room, one-computer community technology center in Santa Cruz del Quiché

I will tell you a story of a small community technology center out in the Guatemalan mountains, doing what needs to be done to bring technology to those who have the desire to learn about it, and bridging languages in order to bridge the digital divide.

Chicken Buses at the Bus Terminal in Xela

One day recently I spent eight hours yesterday on buses for 22 minutes of work, 22 minutes of "community technology" there. At around 8:00 a.m. I, along with two of my friends from a remote village above Uspantan in rural northern mountainous Guatemala, jumped on a second class Guatemalan chicken bus, named so by foreign visitors to Guatemala due to the boxes of baby chicks that normally travel in the storage space above the passengers heads or the full grown chickens sticking their heads out of the wicker bags in the aisle way next to you. My friends Jacinto and Marcelino were headed home and I was off to install a printer at my one-room, one-computer "community technology center" in Uspantan that I set up last year for a group of 16 students who go to school in that town since their home village has no higher education facilities past the sixth grade. They had been in need of a printer for a while but, due to limited financial resources and the scarce supply of parallel port printers in the small 5,000 person town, they did not have many options. For their school work they often need to print up documents and it costs roughly 1.5 Quetzales (about $0.19) for each page in black and white if they print at the one local computer room. I had sat down on a previous visit with them to discuss their needs and promised to return in a week or so with a printer. Since my town of Santa Cruz del Quiché is bigger, 22,000, there are a few more options for printers though I did not find a parallel port printer that would suit their needs. Due to the fact that they needed to be able to buy injectable ink cartridges, I decided on a Canon printer that would require the installation of a USB card. This meant that I would have to travel out to the community since none of the students could install this peripheral device by themselves.

The bus finally left at 9:20am, just a little late, and we sped on down the half-paved, half dust, sometimes one lane, snake-shaped roadway out into the Guatemalan countryside climbing anywhere between 5,000 and 9,000 feet, that's one to two miles up, to reach our destination. We flew by farmers and their spades tirelessly working out under the scorching sun in their fields, past barefoot children playing soccer in the street who would scream and scramble to get out of the way as the bus came rattling around the hairpin turns, past women with long thin poles driving their sheep down the roadway from one field to another, just missing the scrawny dogs that appear with amazing frequency even where there are no villages and sometimes like to take naps in the middle of the road, through the dusty towns of adobe houses that materialize every few miles, through the mountains, in some of the most beautiful and poor country side imaginable. We arrived in Uspantan with about ten minutes to spare, ten minutes before the guardian of the key to the computer room would be gone. Jacinto, Marcelino, and I, along with my multicolored sabana, a woven Guatemalan sheet used by women to carry babies and men to carry everything else from boxes, to clothes, to TVs, in this case wrapped around the printer and my traveling bag which had a USB card and my tools stuffed inside, ran from the bus up the hill to the computer room, and just caught my friend Francisco with the key before he went off to school.

Students at the community technology center in Santa Cruz del Quiché

At this point, it was 12:55 and the bus back to Santa Cruz del Quiché left in 35 minutes. If I didn't catch that one, I would have to wait until 4:00 p.m. for the next bus, which would not get me home until 7:30 at night. So with incredible speed I disconnected all the cords, popped open the casing of the computer, quickly installed the USB card, reconnected all the cables including the one to the new printer, installed the drivers for the card and printer, restarted the computer twice, and printed a test page off on the only paper available, a worksheet that I had along with me for my studies in K'iche'. All this while jabbering along with the three Guatemalans watching and explaining what I was doing and how to maintain the printer. I would not be able to make it back up to the town for at least a month, so they needed to be able to troubleshoot any problems that arose. When I was done, Marcelino, who had been timing me, proudly announced that I had finished in 22 minutes. With that I shook hands with all the guys, said I wished I could stay longer and ran back down the hill to catch the microbus for another three-to-four hour trip back home.

And so, as I sat squished in the back of the sweltering metal-walled sweat-box microbus, heated by the blistering midday sun and surrounded by the other passengers packed into every space available like sardines, I found a refreshing smile on my face, looking at these adventures that are common place in my day-to-day life.

Here in Guatemala I have seen the will of the people to learn and to be a part of what computers bring to the world and so, sometimes, when it's up to me to figure out a way to give them the chance to participate, the journeys to bring technology to the remote locations of the world, especially for those of us interested in "community technology" may be longer, harder, and more demanding than the normal calls of duty, but they're well worth it. ◆

Paul "Pablo" Pitcher is currently a youth and communications worker for Acción Cultural Guatemalteca in Santa Cruz del Quiché, Guatemala. He previously served as a community technology VISTA in Ohio, loves to travel, write stories, and find ways to bring technology to anyone who wants to learn even if that means spending hours flying around dangerous curves in an old school bus.

Technology and Culture in Nepal

Patricia Perkins

I spent the month of November 2004 in Nepal doing technology assessment and planning, and I'm scheduled to go back at the beginning of this summer. Working with the non-governmental organization (NGO) Lumanti: Support Group for Shelter in the Kathmandu Valley, I'm exploring ways database technology can help with data analysis, report generation for their donor agencies, and policy and decision support. This is a story about cross-cultural technology development.

When I got off the plane in Kathmandu, I told Lajana Manandhar, the director of Lumanti, that I just wanted to get my bearings for a few hours, head to my lodgings, maybe sleep off some jet lag. "I have a full programme for you today," Lajana informed me when we stowed my bags in her car.

We went from the airport to the Lumanti offices, where I took off my shoes and sat on the floor for a welcoming ceremony. "Okay," I told Lajana. "Think of me as a clueless but willing eight-year-old girl. You just have to tell me what to do." They sprinkled water over my hands. They gave me foods to eat, strong liquour to drink, stuck a red glob on my forehead, and bestowed a white silk scarf and a garland of marigolds upon me.

It took me two weeks to get an overview of Lumanti's entire organization. I made the rounds, trying to touch base with everyone who could speak English. This is a world that turns on relationships, so what really matters for a foreigner like me is to establish personal connections with as many people as possible.

I didn't try to make appointments. I figured out early on that they don't function out of appointment books, memos, staff notices. They have a staff mail cubbyhole system that, as far as I could tell, is completely ignored. Paper, as a communications tool, isn't part of their modus operandi. This is an almost entirely verbal business culture. People sit together and discuss everything. They meet with their counterpart NGOs and donor agency people and talk everything out. Nobody likes writing reports.

At the end of two weeks, I was ready to present my preliminary findings to the group. Lumanti has computers, a laptop, and an LCD projector. They're adept at using PowerPoint. But they're unfamiliar with databases and they've asked us to design, build, and teach them to use one. I talked about the theory of database technology. It's like this cube of information, I told them, and you can look at it from any of its many sides, making a square appear between my hands, turning it this way and that. "Can I do this?" somebody asked. With the click of a mouse, I told him. "And that?" Yep.

Since they operated on a verbal not printed level, made decisions verbally, solved problems by talking, and did almost everything through conversation, no wonder their monthly reports were driving them nuts. It wasn't their way of working. Heads nodded enthusiastically. Yep. I had seen them as they see themselves. It was a success.

All through the month, Lajana sent me out into the field. We drove out to Tokha, a small town about a half-hour from Kathmandu's last sprawl, the "before" scene. I went to a successful squatter community and attended a meeting between townspeople and a group of journalists and other NGO bigwigs. I sat in on a tense meeting with some evicted squatters who stand to be the inhabitants of Lumanti's first housing project and wanted to be sure the housing they were getting was going to be acceptable. We walked through a low-caste neighborhood in Patan, where Lumanti had paved streets, streets now free of garbage and stench. I went to a meeting with Lumanti's health

coordinator and the city officials in Bhaktapur planning a big Health and Sanitation Fair. I sat in on a child/youth network meeting on International Child Day. I spent a Saturday morning at a meeting of one of the three savings/credit cooperatives Lumanti has helped start. Three hundred and fifty women in a huge university meeting hall and Lajana pushed me to get up in front of the whole meeting and make a speech. I told them America's poor could learn from their courage and resourcefulness.

Part of me felt that my job was gathering information for the database. What was I doing, gallivanting around the valley? I enjoyed my field trips, but did I really need them? Once more, Lajana was right. No matter how many interviews I conducted, how many computer and paper files I collected, it was seeing the streets, the houses and the faces of the poor that Lumanti has helped that taught, inspired and changed me. I knew that going to Nepal for a month was more about what they were going to teach me than what I was going to teach them.

In fact, I did get a small database built. The Squatter Federation, the association of people living illegally on land they don't own, is trying to extend its base into the troubled Nepalese countryside. They sent researchers out into 22 squatter neighborhoods in a district outside the Kathmandu Valley with a simple questionnaire. They asked about population, household size, kids in school, water sources, toilets, jobs, health issues, and other community problems.

I took those questionnaires and created a database, with a form for easily entering the information on the questionnaires. One morning, after I'd given Mahendra, Lumanti's second-in-command, a tour of his new database, he started happily listing the reports he'd like to see. "List of communities, with ward numbers, date established. Chart with districts migrated from. Total population with a pie chart showing men, women, girls and boys. Pie chart with percentages of ethnic groups. Total households with percentages of private toilets and water sources."

As satisfying as that small database was, the big job was collecting information about how the larger organization functions so I could help them with those infernal monthly reports. What information is each sector responsible for? No matter whom I was interviewing, interruptions and diversions were the rule. People, I observed again and again, are more important than data.

"I don't see how I can get the rest of the information collected in the time I have left," I told Lajana on our way to work about a week before my flight was to take off from Tribhuvan Airport for Bangkok and then home.

"We'll have a general staff meeting on Friday and hammer the rest of it out," she declared. Of course. Why hadn't I thought of that? This is a country where everyone comes, sits in a circle, and talks. That's exactly how we'd get our information for the Lumanti Information Management System.

Lumanti Director Lajana Manandhar (second from left) introduces Patricia Perkins (left) to agency donors, government officials and staff.

That meeting was a kind of blueprint for how things work in Nepal in general and Lumanti in particular. The meeting was scheduled for "first hour," which could mean 10:00 a.m. but never quite does. Instead it means "when everyone gets there, when the slide projector is set up, when we've all had our first cup of tea." In fact, I spent the first two hours of the morning showing Mahendra his new database, taking notes on the reports he wanted.

The projector cable needed replacing. Benita, the office girl, called the computer guys across the street and they eventually arrived with shoulder bags and solutions. Lajana had to go to the bank and run a couple of other errands, so we started this meeting without her. The micro-finance guy was busy with his savings/credit cooperatives people who were planning a huge general meeting in early December. People came and went as the meeting progressed. Side conversations were the rule rather than the exception.

We were slogging through English/Nepali translations, the clock ticking inexorably towards lunch time, when Lajana jumped up, grabbed the marker and galvanized everybody. She appointed the water and sewer documentalist secretary and began, rapid-fire, getting everyone's input for the database system.

By lunchtime, we had filled in all the blanks, several staffers had reports to print out so we could flesh out the bones, and —voila!—two weeks worth of work in a flurry on a Friday morning.

The database I'm designing—which will be critiqued, tested, and installed on my next trip to Nepal in early summer—will

store decision-making and policy information, make monthly reports much easier to write, and provide donor agencies with reports that conform to each agency's requirements. Users will log meetings, training sessions, workshops, celebrations and exchange visits.

James Windle of Hatfield, UK, a computer systems tester who provides pro bono tech assistance to an AIDS clinic in Africa, had given me two pieces of advice about before I left for Nepal:

1. Take a laptop, so you can work on data analysis and on form construction at night and early in the morning. You can also show them an idea directly, rather than trying to describe it. And they'll be able to respond right away to design ideas that don't work.
2. Create something small that works. Take one piece, design, and build it from start to finish, and that will give everybody, including you, a feeling of accomplishment and a forward momentum.

James was right on both counts. Taking the portable computer meant that I didn't displace someone sitting at her desk and that I had the capability to demonstrate the power of technology. Creating the small, working, effective demonstration helped push the decision-makers into the critical buy-in so necessary for technology project success.

The other key to success, I learned, is living in the end users' world, on their time, at their pace. People, relationships, conversation—these are what make things—even databases—happen at Lumanti in Nepal. ◆

Patricia Perkins is database and web designer for Worlds Touch, a technical assistance nonprofit. Trish is a world traveler, writer and information management practitioner whom you can learn more about from her blog.

e-Literacy and Connectivity for Development in Kerala, India

Joyojeet Pal and G.R. Kiran

The Akshaya Project in the Malappuram district of Kerala in southern India has established the first district-wide e-literacy project in the country, claiming to reach at least one resident in over 600,000 households, representing a population of about 3.2 million. The Project has, in the process, concurrently set up what is now one of the world's largest Internet Protocol (IP) based wireless networks, covering an area of 38,000 sq. km.

The Akshaya network now consists of 630 permanent village telecenters, known as e-Centers, such that no point in the district is more than a few kilometers from a shared computing facility. Each e-Center is connected through wireless IP by a network of government-funded towers 18-30 meters tall. Each e-Center is expected to have five computers, a printer and scanner along with high bandwidth connectivity. The kiosks are manned by entrepreneurs trained by the Akshaya staff, chosen from the Kerala State IT Mission, in e-Literacy and other applications and services. Services include online bill-payment, assistance with government forms, and investment information.

Project Background, Development, and Implementation

By the mid 90s, there was a wave of enthusiasm in India for computing projects in underserved areas as enablers of regional development. Educating people in the use of computing, and using computing to make citizen access to government services easier, in an economy increasingly driven towards the service sector, was recognized as a vital part of progress.

Panchayats (village councils) in the Malappuram district in Kerala approached the state IT Minister in April 2002 with a request for a district-wide computer literacy project. The state government took the idea forward into a telecenter project for the entire state, using Malappuram as the initial testbed. The plan was to use subsidized e-literacy to start off the project, and let e-Centers continue as access and training telecenters thereafter.

Kerala, India

The pilot was planned and overseen by a state team from the capital, Thiruvananthapuram, and headed by a specially appointed district collector in Malappuram. The full-scale operating network with telecenters and the e-literacy project were up and running in less than two years, 158 of the e-Centers converted from existing businesses, the rest as new ventures.

The project required curriculum development and planning to reach the entire population, provide maximum usage, and telecenter sustainability following the completion of the state-subsidized e-literacy phase. The e-Centers were planned to service approximately 1,000 families each and given an assigned list of households and incentives to train one member from each in e-Literacy. Each home could get subsidized training only at the assigned e-Center. The e-Literacy package included a 15-hour running CD of ten modules, and, though there is a test built in, anyone having watched sessions is considered e-literate.

By March 2004, the e-literacy phase for Malappuram was completed. This in effect means every household has had basic exposure to computing. This does not necessarily mean every household the ability to use applications, but it has been an approach that works towards the gradual removal of the fear of technology and provides a far-reaching introduction to computer basics. The Akshaya planners emphasized training for entrepreneurs for the post-e-literacy phase in six focus areas — multimedia, data operations, software, hardware, financial services, and community building. E-Centers were pooled into groups of six, all groups having one e-Center in each focus area, to distribute demand evenly.

Phase II: From e-Literacy to Shared Access

A year after completion of the e-literacy phase, about 30% of the e-Centers have closed shop, while others have flourished. Local local-level participation— with bottom-up demand and the councils voting to invest their tax revenues in the project— has been able to galvanize a major transformation. Tying the e-Literacy disbursements from the government to entrepreneurs' ability to market the project facilitated a spontaneous campaign of project outreach, which brought the computer to each doorstep. The average entrepreneur had to go door to door, convincing households to enroll for the e-Literacy classes. Of the 140 Rupees (about US$3.25) paid for one person/household taking e-literacy course, the entrepreneur got Rs. 20 directly from the user, the remainder through the village councils. Entrepreneurs often made repeated trips to households, trying to get every potential customer on board. This micro level promotion was supported by a macro level campaign by the state.

The initial phase of the Akshaya e-literacy implementation generated a buzz about computers throughout the district, an extremely valuable phenomenon in itself. Most e-Centers claimed enrollment in the range of 95% of their assigned households. At many locations, the e-literacy program raised the profiles of the entrepreneurs, some eventually standing for public office following their new-found recognition within their communities. Anecdotal evidence indicates that people buying computers had started consulting their local Akshaya entrepreneurs, some of whom became computer resellers.

There are concerns, to be sure, about the financial future of the telecenters. Although the large size of the network was a huge advantage in effectively carrying out the e-literacy phase, the fixed capital infrastructure is faced with economic sustainability concerns now that Internet access and advanced training courses and services are to be the prime drivers of income. Despite the investment in district-wide wireless broadband, less than 400 e-Centers have used the network, and about half of those make money. This raises the question of whether e-literacy, a one-time payback investment, and community Internet access centers, a recurrent revenue enterprise, should be tied together at all. It is also worth comparing the long-term benefits of e-literacy provided through fixed infrastructure with the results of a mobile training model like the example of the eTampere bus in Tampere, Finland. The search for the sustainability foundation with permanent kiosks requires greater study of the regional characteristics of areas in which kiosks are located and of the people who are targeted as future users of the Internet.

Although the state has focused on providing services such as agricultural and fishing information, network analysis shows that communications and transactions are the main draw of customers to telecenters. This suggests that Akshaya e-Centers may need to ramp up and better publicize the suite of services available such as bill payments.

Another factor about community access centers also comes to fore from observing Akshaya. The operational success of the project was guided by the proactive work of M. Sivasankar, who was appointed district collector, the highest administrative position in the state, primarily to run the project. Other districts may not have a similar political heavyweight to prioritize operations. This points towards the need to research the role of a project champion in such development efforts that involve introducing new consumer technologies and include an important citizen-government interface.

Are telecenters a public good and should they be underwritten with public funds? Given the government of India's announcement of a $22 million package for connecting Indian villages to the Internet, this is a crucial question. However, using Akshaya as an indicator for the rest of India can be contentious. Studies such as "The Case of Akshaya" indicate that several distinguishing economic and human development characteristics of Malappuram (and Kerala in general) give it an appreciably unique demand potential of services. Additionally, the Akshaya project bottom-up demand and planning at the village council level present a fascinating perspective on the role of collaborative and community-inclusive planning in setting up telecenters. The referendum-like expression of demand for computer literacy creates a strong case for spending state funds in Malappuram, and the same may not apply to all of Kerala.

In any case, justifying state spending for such a service entails the need to create a case for e-literacy and Internet access as a public utility. The measurable effects of the project on skills, job creation, and local trade in Malappuram and the rest of Kerala attributable in part or whole to the Akshaya Project over the next few years will be instrumental in gaining clarity on these issues. ◆

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G.R. Kiran is the Akshaya Project Coordinator and has been involved in policymaking and implementation of e-governance and ICT for development projects in the state of Kerala, India since 1996. He is an Electronics & Communication Engineer and MBA, with an M.Phil in Applied Economics from Jawaharlal Nehru University, New Delhi, and is currently a PhD scholar in Information Systems at the London School of Economics.

eSeva e-Services in Southeast India

Sanjay Jaju

Andhra Pradesh, India

Democracy, as we all learned in high school, has been defined as government of the people, for the people and by the people. While the first two goals have been to an extent met, the true test of democracy lies in it transitioning to being administered by the people themselves. Being the head of the district administration of the eSeva (e-services) project in the West Godavari District in the province of Andhra Pradesh in India, I had the opportunity of conceptualizing, implementing and sustaining an initiative wherein information and communications technology have acted as an agent in enabling such a change. We have helped to replace the traditional form of governance and its accompanying deficiencies with a modern, more open, transparent and responsive service delivery system.

The project is the prime tool to bridge the digital divide in the rural areas and has used Information Technology for providing access to various citizen-to-government and citizen-to-citizen services through web enabled rural kiosks established in the villages throughout the district. These centers are managed by women's self-help groups, and have been able to position the women as information leaders to help bridge the gender divide.

These centers provide access to the WestGodavari.org district portal which has services ranging from the issuance of certificates required for getting various social benefits to government, education, employment, medical and health program information to utility bill and tax payment capabilities.

The computers in the village information kiosks are on a district wide network (a hybrid of dial up, 802.11 and WLL) helping kiosks interact with the district server hosting the local portal. To save on the networking costs, the project has developed a unique synchronization tool that allows the kiosks to work offline and the databases to be periodically synchronized in minimal time.

The project has been developed using local knowledge and local content by local professionals. There are citizen forums and online auctions and biddings for rural marketing. The project has developed a citizen-centric land records system resulting in evolution of a transparent and effective land record delivery system designed to address the insecurities of the farmers. Although the roman alphabet is being used currently, the content on the citizen petitions is in local language. 14,000 citizen grievances have been redressed in this way—see the success stories listing of 30 Long Pending Grievances Settled. Steps are underway to switch over to the local language fonts.

e-Seva Project Growth	
June 2002:	Pilot ICT initiative to strengthen the self-help groups started.
Nov 2002:	A comprehensive program to deliver civic services at rural points in convergence with self-employment plans envioned and conceptualized.
Jan 2003:	Web-enabled rural kiosks established in 46 places.
June 2003:	Over 300,000 transactions recorded by this time.
Sept 2003:	Partnership with Azim Premji Foundation forged to initiate model whereby children from the elementary government schools can visit the centers daily and use multimedia CDs.
Nov 2003:	120 more centers added; e-enabled education reaches to over 28,000 students; transactions exceed 600,000.
July 2004:	Centers connected through WLL; 70,000 students taking e-enabled education.
Oct 2004:	Transactions reach 1.5 million; over 350 million rupees collected against electricity bills.
Nov 2004:	E-commerce activities for tribal tourism activities launched.
Dec 2004:	Telemedicine from specialists to the primary health centers started.
Jan 2005:	Transactions exceed 2 million.
Feb 2005:	A strategy entitled "Closing School" for training graduate unemployed youth in computers, English, communication, and managerial skills for corporate placement launched.

Some Additional Benchmark Statistics January 2003 – March 2005

- 68,500 Old Age Pensions issued along with Identity cards
- 3,59,790 Integrated Certificates issued
- 770 House sites disputes solved
- 328 Bus shelter and timings issues resolved
- 945 Land disputes resolved
- 54,000 Ration card issues solved
- 13,906 specific citizen problems solved
- Over 10,000 e-commerce transactions for tourism, goods and services.

With over 200 kiosks in the district the project has completed more than two million transactions so far. Centers are doing good business and becoming self-sustainable, earning $50-500 per month. The project has also opened the possibility for the self-help groups to market their products directly without the need for middlemen. The website has become a major dissemination and broadcasting tool and has helped in the creation of a knowledge and information economy.

The West Godavari eSeva project won the Outstanding Gender and ICT Project Award for Community/Individual Capacity Building at the World Summit on Information Society in Geneva in December 2003. The project has also won the first prize in the National Awards of the Computer Society of India that year. The project was nominated for the 2004 Stockholm Challenge Award in e-democracy category. In January 2005, the Project was conferred the National Award for Exemplary Implementation of eGovernance ("Gold Icon") by the Government of India. ◆

Views of e-Seva centres

Mr. Sanjay Jaju is Collector & District Magistrate, West Godavari, and Director of Disrict Administration of eSeva. Mr. Jaju is a mechanical engineer, has completed the Post Graduate Programme in Project Design & Management at the University of Manchester in the U.K., and previously served in the Indian Administrative Service.

Burkina Faso, West Africa: A Case of Internet Usage in Higher Education in Emerging Countries

Ibrahima Poda and William Brescia

Among the former French colonies of West Africa, Burkina Faso (formerly Upper Volta), gained its independence in 1960 and became one of the first countries in francophone Africa to gain access to the Internet in 1989. With a population of 12.2 million and a per capita gross national product (GNP) of $300, it is one of the poorest nations in the world, with only 32% literacy, according to the U.S. State Department's Bureau of African Affairs.

The leaders of the country believe that Internet usage can accelerate social and economic development. A National Information and Communications Infrastructure (NICI) Development Plan was approved in 1999, addressing the areas of (a) computerization of the state/administration, (b) reinforcement of national capacities and the quality of training and research, (c) improvement of economic potential, (d) development of community communication centers, and (e) infrastructure development. The NICI Plan 2000-2005 includes a detailed Internet Initiative to (a) establish a national infrastructure through expanding the existing FasoNet, (b) increase the connectivity rate (from 256 Kilobits per second to 512 Kbps) between FasoNet and Teleglobe Canada, their international ISP, (c) reinforce training at training centers, and (d) develop national expertise through trainer training.

The University of Ouagadougou in the nation's capital currently uses the Internet for two purposes: to improve communications and to increase accessibility to useful information. The Internet greatly enhances communications and the exchange of information between faculty, staff, and students and provides savings when compared to other electronic forms of communications. The costs for Internet communications are lower than the telephone or FAX, making the Internet the least expensive communications tool to use. For faculty, staff, and students, the Internet helps in meeting the need for resources

otherwise only available in libraries. The NICI Plan foresees education and research institutions in Burkina Faso connected together through the Internet, allowing them to exchange resources, collaborate at a distance, participate in virtual training, and use scientific and technical information to facilitate learning and socio-economic development nation-wide.

There are, however, major problems. First, equipment and connectivity is limited. In 2001, the Direction de la Promotion des Nouvelles Technologies de l'Information et de la Communication (DPNTIC), the department for promoting the use of the new information and communications technologies, indicated that there were only 1,700 Internet users and the 14,000 students enrolled in various degree programs on campus. Most of the existing equipment continues to have limited capacity, and connectivity is random. Faculty, staff, and students endure slow speeds when browsing the Internet, and frequently experience being disconnected from the main server, rendering the online experience challenging for campus users.

The Réseau Africain de Formation à Distance / African Distance Learning Network lab.

Internet usage at the Unité de Formation et de Recherche/ Sciences Humaines or the Learning and Research Unit/Social Sciences (UFR/SH) is influenced by a lack of computers with Internet access. This academic and research unit is facing mounting internal and external pressures for changing the way information is accessed and how learning takes place and research conducted. When the DPNTIC undertook its general survey, the department inventoried 56 computers available at UFR/SH that were fully functioning; they found half of these were providing access to the Internet, however, most were installed in administrative offices. Only 50% of the faculty members at UFR/SH regularly used the Internet and accessed it in the computer labs located at the technology centers across campus and the central library. Student Internet access at UFR/ SH was restricted to graduate students due to the insufficient capacity in computer labs.

In addition to the absence of consistent interconnection among an insufficient number of existing computers on campus there is also a lack of technicians, technology coordinators, and training and support for administrators, faculty, and students. The university has not yet proven to be effective in assessing needs, and disparities between academic units, insufficient coordination of various initiatives, and the absence of an institutional technology plan for administrative and financial management as well as educational purposes all hinder development.

Despite these problems, because the Internet offers a broad range of possibilities for learning at all academic levels, there is a growing interest in financing technology and developing strategies and techniques for incorporating technology into the curriculum at UFR/SH. Already limited Internet use has had a positive influence on learning for everyone. On campus, the administration is now increasing computer support and training to administrators, faculty members, and students.

While the obstacles remain substantial, there is promise for the future. A short-term plan for improving Internet use at UFR/SH is necessary. UFR/SH and the university must find effective means for additional equipment acquisition and increased the connectivity. Creating faculty and student labs and providing additional assistants are additional steps that would have immediate positive effects.

The case of the University of Ouagadougou in Burkina Faso provides information about a state of limited connectedness within an academic unit, suggesting the type of assistance that is needed. Deconstructing this information might provide a better understanding of the patterns, opportunities, and needs elsewhere in the emerging countries. ◆

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The Stockholm Challenge Awards

The Stockholm Challenge enables ICT community development projects in all parts of the world to share their work. The biennial Stockholm Challenge Awards are accepting entries for the current event until December 31st, 2005. Categories are Public Administration, Culture, Health, Education, Economic Development, and Environment. The 2004 Awards attracted nearly 900 project entries from 107 countries. The awards will be presented in a ceremony at Stockholm City Hall in May 2006 at the end of a three-day networking and exhibition event. The application for the award is available online.

Community Media and Technology Publications Update

The Journal of Community Informatics

The newly-inaugurated *Journal of Community Informatics* brings together a global range of academics, CI practitioners, and national and multi-lateral policy makers. The second issue is dedicated the theme of "Sustainabilty and Community ICTs" and explores the challenges of creating sustainable projects and initiatives, and transformations that results from these efforts.

- Editorial: Sustainability of Community ICTs and its Future *by Michael Gurstein*
- Sustainable Community Technology: The symbiosis between community technology and community research *by Peter Day*
- Tsunami Warning Systems and the Last Mile *by Michael Gurstein*
- A Way Forward: Sustainable ICTs And Regional Sustainability *by Greg Hearn, Megan Kimber, June Lennie and Lyn Simpson*
- Community Portals: A False Dawn over the Field of Dreams *by Stephen James Musgrave*
- Sustaining Community Access to Technology: Who Should Pay and Why *by Vanda N Rideout and Andrew J Reddick*
- Online communities sustainability: some economic issues *by Laura Anna Ripamonti, Fiorella De Cindio and Mario Benassi*
- Sustaining and transforming a community network: The information continuum model and the case of VICNET *by Donald Schauder, Graeme Johanson and Larry Stillman*
- Community Informatics and Sustainability: Why Social Capital Matters *by Lyn E Simpson*
- Emotion, Gender and the Sustainability of Communities *by Kerry Jeanne Tanner*
- An Interpretivist Case Study of a South African Rural Multi-Purpose Community Centre *by Jean-Paul Van Belle and Jonathan Trusler*
- Sustaining Computer Use and Learning in Community Computing Contexts: Making Technology Part of "Who They are and What They Do" *by Cecelia Bridget Merkel, Mike Clitherow, Umer Farooq, Lu Xiao, Craig Harvey Ganoe, John M Carroll and Mary Beth Rosson*
- A Role for Universities in Sustaining Regional ICT Initiatives? Exploring the Case of the University of Ballarat *by Helen C Thompson*
- A Note on "Notes from the Field" *by Michael Gurstein*
- Open letter to Prime Minister Paul Martin: Broadband connectivity in aboriginal communities *by Geordi Kakepetum*
- Community Wireless Networking and Open Spectrum Usage: a Research Agenda to Support Progressive Policy Reform of the Public Airwaves *by Sascha Meinrath*
- In memoriam: Dirk Koning, 1957-2005

Community Media Review

The quarterly journal of the Alliance for Community Media, a nonprofit, national membership organization founded in 1976, representing over 1,000 Public, Educational and Governmental (PEG) access organizations and community media centers throughout the country. The Fall 2004 issue, edited by Margie Nicholson, is focused on the theme of "Cultural Preservation & Diversity" and available in its entirety in PDF format.

The Nation

The May 23 issue is dedicated to the theme of "Radio Waves: The New Sounds of Unmanaged Democracy," much of which is available online including a profile of Amy Goodman, the dynamic host of Democracy Now! by Lizzy Ratner, The Liberal Media—What Would Dewey Do? by Eric Alterman, Confessions of a Listener by Garrison Keillor, Low-power Radio by Rick Carr, Clear Channel's Failure by Eric Magnuson, Good, Gray NPR by Scott Sherman, and more.

The Nonprofit Quarterly

The journal of Third Sector New England, that provides information and services to support the entire nonprofit sector. Each issue generally contains a "Technology" section. The Winter 2004 issue on "The Responsibility of Leadership" includes an online version of the editors' conversation with Eli Pariser, one of MoveOn's founders, on "Online Fundraising and Engagement" and how the two are linked.

Brainstorm

The City of Seattle Community Technology ezine. The May 2005 issue features updates on free city WiFi spots; Acessa São Paulo, a community technology initiative in São Paulo, Brazil to close the digital divide; www.tips4you.org, a new consumer website about how to establish and protect your credit, avoid predatory lending, and manage money; more, including archives with tech tips and links.

Book Reviews

Research Methods for Community Change: A Project-Based Approach

by Randy Stoecker
Sage Publications, Inc.

Reviewed by Melissa C. Jeter

Research Methods for Community Change is a practical and thoughtful guide for all who have a burning desire to actualize fairness, justice, peace and true democracy. Written in a narrative style that includes personal anecdotes and observations, stories from Alice in Wonderland, common idioms and jokes that in no way diminish vital scholastic insight, this book is accessible to both community workers and students. Stoecker provides a summarized list of conclusions and concrete investigative resources in addition to the expected endnotes and takes the reader chapter by chapter through research methods that are systematic and goal-oriented. Throughout the book Stoecker confronts the truth of how community work stretches and challenges your will as you encounter the realities of issues such as possible homelessness due to predatory lending practices, child abuse, domestic violence, and job loss as well as the navigation of community-based organization, office, city, state, and local politics. Stoecker has written this for people who want to get their hands dirty and resuscitate unhealthy communities.

In the first chapter, Stoecker argues that ongoing systematic goal-oriented research can yield better results. Community-based organizations and their staff who produce real, concrete, and measurable project-specified results demonstrate the importance of their work to funders and have an advantage in obtaining and maintaining funding. Chapter two examines the roles and capacities of the researcher, and explores the differences between the work of academic researchers and community-based researchers. In chapter three, Stoecker presents the project-based approach to research methods, and addresses the long-standing lack of connection that academic research methods have had with actualizing community change.

To emphasize that the goal-oriented nature of project-based research is to resuscitate unhealthy communities, Stoecker uses medical terminology in the titles of chapters four through seven: diagnosing the problem, prescribing an intervention, implementing the prescription, and evaluating the impact. In chapter seven, Stoecker discusses evaluation. While evaluation is the end of the research process, it is best seen as an ongoing process, one that should include community members. Stoecker shares his evaluations with the community so they can participate in their own portrayal before he delivers reports to funders or government officials, and he shows that community change brought about democratically in this way is as important as creating the change itself.

In the last chapter, Stoecker discusses research methods as a lifestyle, and begins by discussing how his parents were able to educate themselves about getting affordable prescription drugs. Such techniques as popular education involve learning information based on real, immediate needs and Stoecker shows how integrating research into our lives can lead to our becoming more of a do-it-yourself society rather than one in which we pay others to do research as service for us. When you work in a community you find that the community is quite knowledgeable about what its problems are and how to solve them. The benefit of community-based research is that the community becomes empowered. Communities can leverage their knowledge by working with organizations or academics who have chosen to recognize the power and privileges a university provides and lend them to long-time disempowered communities. As community workers and students who aspire to create change in communities, it is important to note the difference between knowing information and having the ability to influence. Recognizing and using your power and privileges to create change in communities is not paternalistic, it is a real and noble effort.

In sum, read this book and use it. It is a thoughtful and practical guide that offers priceless resources for community workers and students who want to create community change. ◆

Melissa C. Jeter has been a community organizer in Toledo, Ohio, trained by the Association of Community Organizations for Reform Now (ACORN) as well as an instructor at Adrian College, Monroe County Community College and the University of Toledo Community and Technical College, where she earned a Master's in Sociology. Jeter is currently writing a novel about a community worker's quest for the meaning of the American Dream.

Community Practice in the Network Society: Local Action/Global Interaction

Edited by Peter Day and Douglas Schuler
Routledge (Taylor & Francis Group)

Reviewed by Daniel Schackman

As a companion volume to *Shaping the Network Society,* previously reviewed here), this interesting collection delves deeper into the role of community technology and networking in the Network Society. Day and Schuler are particularly concerned with the lack of involvement of civil society and communities in the information and communication technologies (ICT) revolution that is primarily serving the interest of globalized commercial interests, and is a threat to true democratization. But there are signs of hope at the grass roots as communities use ICT for social networking to further their vision of a more citizen-oriented, diverse "Civil Network Society."

As in *Shaping the Network Society*, the authors divide the publication into three sections. Part I, "The Network Society: Issues and Exigencies," lays out some historical context and current assessment. The articles make a compelling case for the challenges to democracy, civil society, and civic engagement wrought by corporate control of the Network Society, and offer some examples of initiatives that are countering these effects. In Chapter 5, "The Changing Online Landscape," Eszter Hargittai describes the challenges faced by non-profits fighting for a presence in the commercial web environment and suggests strategies to overcome the odds. The broad range of suggestions includes focusing content on a target audience of stakeholders rather than trying to compete with broader-interest web sites; working in tandem with other like-minded and supportive organizations to cross-link in order to raise their respective rankings on search engines; keeping the content fresh, both to encourage return visitors and to keep up with web search engine programs that look for new material as part of their ranking criteria ("Ideal in this case would be to include a blog…on the site with nearly daily updates."); creating interactivity on web sites; and developing email lists with messages about web site updates to encourage traffic. She also proposes the creation of a non-profit search engine initiative, but recognizes that there would still be the challenge of getting people to the web site.

Part II, "Snapshots of Community Practice," focuses in on specific ICT models, including networks in Latin America facing the challenges of internal digital divide issues among elites and poor in their own countries, and a national public dialogue about ICT in El Salvador that is yielding some positive results. Chapter 9, "Social Cyberpower in the Everyday Life of an African American Community," profiles the exciting community-building work being done with ICT at the Murchison Center in Toledo, Ohio, covered elsewhere in this issue.

Part III, "An Emerging Community Technology Research Agenda," explores the growing field of community informatics with specific case studies and theoretical constructs such as "A Human Rights Perspective on The Digital Divide" (Chapter 11). In Chapter 12, "An Asset-Based Approach to Community Building and Community Technology," Nicol Turner-Lee and Randal Pinkett offer strong conclusions based on case study research that shows how valuable and crucial it is to view members of the community as assets that can be tapped into to identify, address and solve community problems through ICT. Their involvement is crucial to the process of social change that emerges, and is in and of itself empowering, rather than a top-down approach coming from outside the community.

In the Conclusion of the book, "Integrating Practice, Policy, and Research," Day and Schuler make a convincing case for academia, community groups, and advocacy organizations to work together as a powerful force for effective social change. This publication fulfills the editors' goal of providing inspiration for community practitioners and researchers to develop the field of Community Informatics, and to discover the strength derived from working collaboratively. ◆

Daniel Schackman, previously a VISTA with CTCNet, is one of two VISTA Leaders with the CTC VISTA Project and Assistant Editor of the Community Technology Review.

ArcView and TerraSeer Data Analysis Software

reviewed by Michael Wolf-Branigin

Technology Assistance and Resource Centers, CTCs, and other community organizations provide persons with a variety of needs with technology access and training and other technology-based social services. By using geographic information systems (GIS) and exploratory spatial data analysis (ESDA) to identify clusters of activities, community practitioners can better plan for supports and services. ESDA provides good descriptions, often in the form of maps, of available data. By using ESDA, stakeholders in organizations improve their ability to detect patterns and relationships. Using GIS and ESDA provides the ability to identify clusters and aids in deciding whether to allocate or reassign additional resources and supports to areas of high use.

Two relevant software packages for performing this kind of research are *ArcView* and *TerraSeer*. *ArcView* software supplies the framework for conducting the analysis by providing the address mapping information. The *TerraSeer* software provides the ESDA with the ability to analyze the data from *ArcView*. Use of this begins by collecting data at the individual consumer level and is often available in the organization's database. The address matching function, available within the *Arc View* software program, generates the two geographic coordinates (longitude and latitude) to represent the person's address on a map. After

plotting these coordinates, we assess clustering by applying spatial autocorrelation analyses available in the *TerraSeer* software package in order to determine the degree of clustering.

Because these software programs can be difficult to use when you begin and are comparatively expensive (though under $1,000 each), look for assistance at the company websites or through colleges and universities. Urban planning and geography departments can provide valuable resources. While each will be different, many university departments, including graduate level social work and urban planning programs, can arrange internships for college credit. Most universities with urban planning programs will have access to these software packages. Many faculty members will provide pro-bono assistance especially if your organization's project can provide the basis for classroom assignments and possibly lead to publications. ◆

Michael Wolf-Branigin, Ph.D., Associate Professor of Social Work at George Mason University in Virginia, teaches courses in research methods, and social policy and social justice. His areas of specialization include disability studies, consumer-choice models, and quality of life outcomes.

AtomicLearning.com

reviewed by Shannon McCue

Atomiclearning.com is a website that provides software training for various Windows and Macintosh applications. Some of the application tutorials for Mac are Dreamweaver, Photoshop, Excel, Illustrator, Final Cut Pro, GarageBand. Windows tutorials include Acrobat Reader, Flash MX 2004, Word, and PowerPoint. The list goes on and on. There are thousands of short tutorials on dozens of applications, focused on answering the common questions that teachers, students and other users might have when learning software programs.

What I like most about this website is its ability to breakup the learning process into the basic need to know essentials. It sets you up with five or six two-to-three minute QuickTime tutorials and takes you through the process of setting up and starting a project. The only downside is if you want to get the full tutorial you have to sign up for a membership ($79). In my opinion it is well worth the money especially if you are working at a school, university, or CTC, since there is plenty of useful training available to all members, clients, students, and staff. They also provide you with lesson plans, curriculum tools, and workshop guides. As you can see, the free tutorials can be a tremendous help in providing training for staff, students, and faculty. This website is a very good resource for anyone working in the community technology field. I know I definitely will be using their tutorials more in the future. ◆

Shannon McCue is a CTC VISTA working with the Community Media and Technology program at UMass/Boston.

My Fuzzy Crystal Ball

Angela Stuber

I am very skeptical of those who call themselves visionaries, thus I hesitate to reveal the scene in my crystal ball. A few members of the Ohio Community Computing Network (OCCN) Board have pressed upon me the importance of being ready for the future, whatever that may hold. Since my crystal ball is a bit fuzzy, I've chucked it over my shoulder and begun looking at this issue using the only methods I am familiar with — fact gathering and group discussions.

This past year, OCCN conducted a survey of Ohio CTCs to determine such data as number of individuals served, programs being offered, biggest obstacles, etc. The OCCN Board then held a strategic planning retreat with board, staff and CTC guests.

The result was an acknowledgement that technology and how our communities use technology is becoming less place-based. We have seen an increase of community-based organizations (some with place-based CTCs and some without) operating mobile computer labs (such as the Akron Urban League) and mobile media programs (such as the Neighborhood Network in Columbus). We also realized the kinds of services being offered by CTCs is growing wider. Some CTCs only offer computer usage and training for basic computer skills, résumé writing, and Internet access. Other CTCs have entered into access and training for multimedia, IT networking, and PC hardware. Beyond classes, some CTCs are running computer recycling centers and giving away or selling computers for the home.

Considering the immense variety of community technology programs and the inclusion of non-place based programs, the OCCN Board recently voted to change the OCCN mission statement. The new mission statement was broadened to include community technology programs beyond CTCs. The term the board created to define who we serve is "community technology service providers."

The Board members who pressed me to be visionary want OCCN to be prepared for any technology changes that impact technology accessibility and usage. Such a charge leads into the question of how OCCN can help community technology programs be prepared for technological changes. A large part of the task for OCCN and our members is being open to creatively considering how new technologies can be used to respond to the needs of our communities. Two organizations that already operate with this foresight are the Southern Perry County Youth Art & Media Center (SPiCYAM) and the Appalachian Center for Collaborative and Engaged Learning (ACCEL). SPiCYAM provides rural youth technology-based art opportunities to focus their energies. ACCEL has discovered immense success using online curricula for an alternative high school education.

Another issue that impacts both urban and rural Ohio constituencies and that needs to be addressed is Internet access. Dial-up access to the Internet severely restricts the users' access to online information. Broadband providers install broadband where it is economically beneficial to do so resulting in some rural areas not having access to broadband. Both rural and urban area CTCs and individuals struggle with the high cost of broadband.

When I accepted the OCCN Executive Director position in January of 2000, I heard repeatedly that CTCs would become obsolete, that computers would be so cheap everyone would have one in the home and they would all be connected to the Internet. Those visionaries were wrong. The role of CTCs may be changing but they are still very much needed, and the challenges and opportunities we face in Ohio have resonance with CTCs around the country.

The community technology movement is changing, as it should, not only to keep pace with current technology but to find innovative uses for it to benefit our communities. Considering that the community technology movement is full of solution-minded activists, I have no doubt the challenge will be met head on with a plethora of amazing ideas. ◆

Angela Stuber is the OCCN Executive Director and the CTCNet Board President.

Community Technology Review — Back Issues Available
in the Online Archives and in Hardcopy

Discounted bulk copies available for classroom use, plus curriculum integration support.

Regular Contributions:

- Updates from: CTCNet and AFCN, AmeriCorps and AmeriCorps*VISTA technology programs, The Children's Partnership, Computer Professionals for Social Responsibilty, CompuMentor, and the Community Media and Technology Program in the College of Public and Community Service at UMass/Boston.

Special Features from Recent Issues:

Summer-Fall '01:

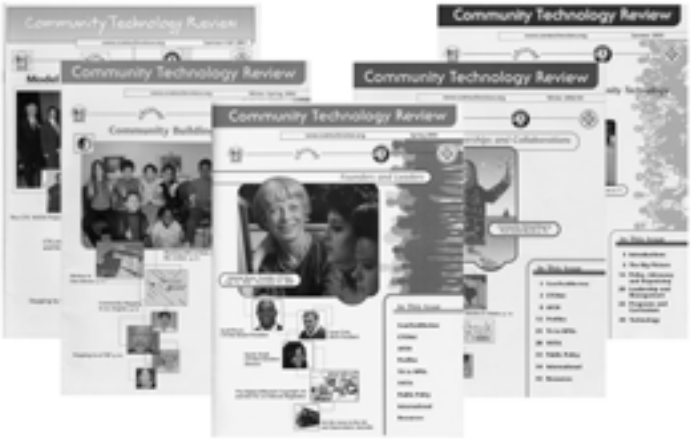
- Bridging the Digital Divide in DeKalb County *by Paul Baker*, and the Atlanta Community Technology (ACT) Initiative *by Lynette Kvasny*
- The Lowell, Massachusetts Community Technology Consortium *by Felicia Sullivan*
- Helping Nonprofits Technology Turbocharge! *by Marc Osten*, and The Community Technology Toolbox Grows into a Garage *by Terry Grunwald and David Wilcox*
- On the National Service Leadership Institute *by Angela Stuber*
- The Debate Over HR 1542—The Internet Freedom and Broadband Deployment Act: An Exchange between *Audrie Krause/NetAction and Al Hammond/the Alliance for Public Technology*
- The Community Information Corps at the University of Michigan School of Information *by Paul Resnick*

Winter-Spring '02

- Post 9-11: Alive and Well, Not in Manhattan Today *by Karen Zgoda*
- Northern New Mexico's Last Mile Wireless Service *by Judith Pepper*
- Community Mapping for Neighborhood Knowledge in Los Angeles *by Bill Pitkin and Nick Rattray*
- Running LAPs: On the Local Access Path *by Max Gail and Casey Hughes* and Parks and Recreation LAPs *by Pam Earle*
- Community Informatics: Current Status *by Michael Gurstein*
- On the Institute for African American E-Culture *by Phoebe Lenear*
- Building the Timothy Smith Network in Boston *by Marc Osten*
- Delivering Tech Assistance with Circuit Riding: Learning through Two CompassPoint Projects *by John Whitmer*
- International Reports *by Doug Schuler and Scott Robinson*

Winter '03

- Transforming Rural Alaska through Wireless *by Martin Cary*
- Mapping & Community Organizing in Philadelphia *by Eric Hoffman*
- Summer Computer Camp in Columbia, SC *by Dedria Albritton* and ScienceQuest for Youth: A Growing Program *by Jennifer Dorsen*
- Sweet, Sweet $ustainability *by Ken Thompson*
- Online Fundraising Comes of Age *by Michael Stein* and Unlocking the Potential of Open-Source *by David Geilhufe*
- The Corporation and the Digital Divide *by Peter Miller*
- Findings from PowerUP's First Phase Evaluation *by Lisa Schneider and William Vesneski*



- Community Networking in Post-Soviet Russia by *Sergei Stafeev*, Penza Association of Refugees & Forced Migrants by *Oleg Sharipkov*, Municipal & Civic Internet in Togliatti by *V.V. Efrosinin*

Spring '03

- I-CAN Earned Income Credit Electronic Filing: Putting Money Back into Poor People's Pockets *by Gabrielle Hammond*
- On ConnectRichmond *by Nancy Stutts* and the Kentucky Disabilities Consortium *by Tricia Davis and Ruth McCann*
- Building Community Technology Capacity Through Service Learning *by Karla Back et al*
- An Illinois Consortium at the Digital Crossroads *by Layton Olsen*
- Point / Counterpoint The FCC's New Broadband Rules on "Unbundling" Network Elements *by Debbie Goldman and by Bruce Kushnick*
- Skill.net Internet Training on the Road in Queensland, Australia *by Anna Raunik*, Community Learning in the UK Via Radio and the Internet *by David Wortley*, and The Digital City of Parthenay *by Federico Casalegno*

Summer '03

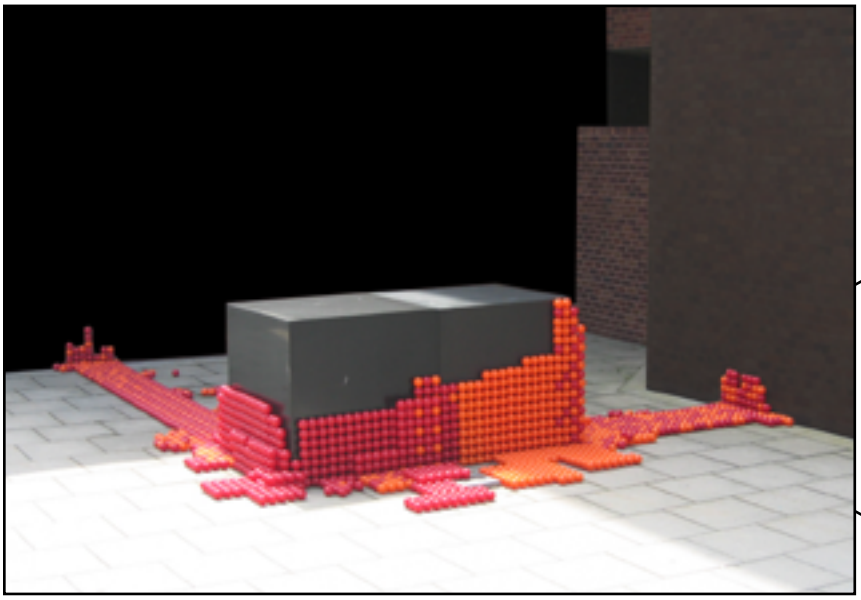
Special conference issue with departments and articles designed to inform workshop tracks and presentations:

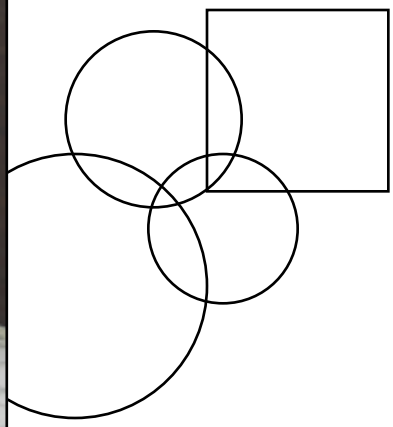
- Using GIS Mapping to Build Community *by Megan Kinney*
- An Online CTC Database for the Twin Cities *by Jeff Streier*
- Interviews with Conference Presenters: Steve Wright, Jemuel Johnson (the CTC behind the CTCs in Rochester, NY), Nyvia Colón, and Phil Shapiro (Technology Scout and Digital Storyteller)
- Community Technology Policy Strategies *by John Zoltner* and Rep. Nydia Velázquez: Congressional Support for Community Technology
- Regional Policy Action: CTCNet Chicago/Illinois Tech Day *by Debra Walker Johnson* and California Community Technology Day *by Maricela Carlos*
- Going from Free to Fee-Based Services *by Alicia Altmueller and Sean DeWitt*
- LEARN in Connecticut *by Nancy Cleary and Paula Cymbala*
- Computer Recycling/Refurbishing—in Rural Washington *by Ronda Evans*, and ValleyNet in Vermont *by Ronald Boehm and John Fay*

See pages 6, 21 & 29 for summaries of more recent issues.

newCube

a study for an object definition





newCube, a sculpture by Paul Hansen, was installed on and around Sol LeWitt's sculpture, *Double Cubes*, at UMass/Boston in May '05. newCube plays off LeWitt's minimalist system based approach—essentially extending the system while also questioning many of the underlying principles on which the work is based: completeness, permanence, simplicity and stability. See cube.userobject.com.

newCube is the sculptural output of an incomplete psuedo-computational system.

From the newCube source code:

```
doubleCubes=new Sculpture(Cube(4,flat,black),Cube(4,glossy,black));
Sculpture.toField=new Function(location)
{
site=new Map(location,this);
field=site.toArray();
return field;
}
...
return doubleCubes.toField(UMB).clip().slice();
```

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