Building eCommunities: Getting everyone connected

Address to the Governor's Commission on Inforamtion Technology
Richmond, Virginia, August 31, 2000
Andrew Michael Cohill, Ph.D.

In the late nineteen-eighties , the Information Systems group at Virginia Tech, the land grant university of Virginia, proposed two notions that at the time were considered radical, if not a bit kooky. The first was that virtually all citizens would own and use a computer. The second was that virtually all those computers would be connected to a network that would enable business, private communications, and government services online. Since the start of the Blacksburg Electronic Village project by Virginia Tech, the university was and still remains committed to helping everyone in the Commonwealth learn to use the Internet.

In fact, some of the very first Internet-enabled ecommerce took place in Blacksburg in 1994 and 1995, long before the dot.com revolution. A local grocery store, Wade's, began selling flowers online, paving the way for the likes of Amazon and eBay years later. Within weeks of starting the service, Wade's was taking orders for flower delivery from overseas.

Today, Blacksburg has the highest per capita use of the Internet in the world, with a 1999 study showing more than 87% of Blacksburg residents using the Internet in their daily life. Along the way, Blacksburg has been a pioneer in many ways.

Blacksburg was the first community to adopt an all-Internet model for a community-wide network, long before the Internet was widely recognized as important to commerce and communities.

Blacksburg was the first place where you could obtain residential broadband access to the Internet. Today, we estimate that more than 60% of Blacksburg residents have high speed broadband access in their businesses and apartments. That broadband access is not based on bridge technologies like cable modems or DSL, but instead utilizes Ethernet. Today, residents in Blacksburg enjoy 10 megabit Ethernet which can be easily upgraded to 100 megabit Ethernet or even Gigabit Ethernet.

The Blacksburg Electronic Village and Virginia Tech ensured that local schools, county-wide, were the first in the nation to have broadband Internet access in every school and in every classroom.

Affordable broadband Internet access has created new jobs and work opportunities in the

community. The Virginia Tech Corporate Research Center is among the ten fastest growing business parks in the country, and Blacksburg is the business location of choice for companies like nanoCom <www.nanocom.com> that are developing the next generation of videoconferencing software.

More than twenty-four technology companies have been started in Blacksburg in the last five years. But traditional Main Street companies have also taken advantage of Blacksburg's sophisticated network. The BEV online business directory has nearly 500 local business listings--virtually every single business in town is using the Internet for advertising and commerce. Past Pages, a small local business that sells used books, does more than half its business online. Fun n' Games, another small, locally owned Blacksburg business, has been successfully selling its products to a worldwide audience for nearly five years.

Blacksburg is the first community in the country to use the very high bandwidth LMDS wireless technology to deliver Internet access to local apartment complexes.

There are five key roles for community networks

First, community networks promote economic development. By diffusing technology widely across the entire community, community networks play a critical role in creating a skilled, 21st century workforce. Community networks also work closely with businesses and property owners to create Internet-ready office space for IT businesses and entrepreneurs.

Community networks also provide training and education directly, and help citizens and business people identify and access other training resources like community colleges and public and private training programs. Indeed, much of what my group has done over the past seven years has been tied, in one way or another, to education. We help citizens, local leaders, teachers, and business people understand how to use the Internet more effectively.

Community networks play a crucial role in creating a competitive marketplace for telecommunications. In Blacksburg in 1993, the BEV offered Internet access to the general public before there was a competitive marketplace for that service. Once the private sector was ready to offer that service, the BEV divested its customers and moved them into the private sector. In 1994, the BEV began providing broadband Ethernet services to homes, schools, and businesses in Blacksburg. Once the private sector was ready to offer that service, the BEV once again successfully moved its customer to the private sector. In many other communities in Virginia, those marketplaces still need to be created through innovative public/private partnerships.

Community networks create public spaces in cyberspace. Communities have a long history

of investment in public spaces--libraries, recreations centers, parks, and town halls. In Blacksburg, the BEV provides these public spaces for the town, the library, and more than 150 community, civic, and non-profit groups. It is important that we continue to provide community-supported spaces that are free of advertising, so that local groups can meet and pursue their personal and civic objectives free of undue influence from advertising-supported services.

Community networks can also play an important role in providing high quality technology services to local government and non-profits. By doing so, we are reducing costs for local government and saving tax dollars that can then be used for other purposes.

What is next for the e-community?

At Virginia Tech, our target for both wired and wireless broadband services is 25 megabits (dedicated, not shared) to the home and to the business. In a recent government hearing in Washington, D.C., major telecommunications companies described "broadband" as 256 kilobits to 1 megabit. We believe this is entirely too low. In Abingdon, Virginia today, a public/private partnership provides 10 megabit fiber to the home and to Main Street businesses for $35 per month, and for $70/month you can obtain 100 megabit Ethernet access. I want to emphasize that this is fiber directly into the home and business. It is not fiber to the neighborhood or fiber to the curb. You can stand on Main Street in Abingdon, and as you look down the street, virtually every single business is connected via fiber. And that fiber can be simply and inexpensively upgraded to provide dramatically increased bandwidth.

It is important to create digital opportunities for all Virginia citizens. Virginia Tech, the Blacksburg Electronic Village, VMH, a non-profit builder, and the Town of Blacksburg are working on the Cedar Hills project--an effort to bring fiber directly into the homes of a low income neighborhood in Blacksburg. Every citizen of the Commonwealth should have affordable broadband access regardless of where they live.

Characteristics of the eCommunity include:

- High bandwidth services into and throughout the community, for all businesses, organizations, and residents. The target bandwidth is 25 megabits/second (dedicated, not shared) for both wired and wireless services.

- Affordable access community-wide wherever it is needed. Fast access does not always mean inexpensive access. The two must both be available.

- A community-managed telecommunications infrastructure that creates a level playing

field for local and regional access and service providers. This infrastructure would include community telecommunications duct systems, co-location facilities, and very high bandwidth local data exchange services (MSAPs). Some communities may also want to provide dark fiber.

- A minimum of three to four network access companies providing a full range of services and reasonable prices, with at least two backbone providers that enter the community by separate cable routes.

- Economic development initiatives tie to Information Economy business needs, especially the development and support of local entrepreneurs and the development of a skilled workforce.

- Online government, schools, and libraries, offering services 24 hours a day, 7 days a week.

- Connected citizens and civic groups engaging the community and bringing people closer together.

- Careful attention to quality of life issues, including limits on sprawl, greenspace preservation, traditional neighborhood development and preservation, and alternative transportation initiatives like bikeways and walking trails.

E-communities are not about technology, but community participation

The real purpose of eCommunities is to strengthen relationships within the community. The Internet is not about technology, but about communicating more effectively--with family, with friends, and with our fellow citizens. The most important thing I have learned over the past ten years of designing software and services for community use is that in a world where the technology is changing constantly, the most important thing in any business or community venture is human relationships.

In a fast changing, increasingly complex, and interconnected world, the only thing we can rely on is our relationships with other people. So many communities come to Blacksburg with questions about what to buy--what "stuff" to get--but that is the easiest part of the problem to solve. The hard part is understanding how technology and the Internet are changing our relationships.

The network is a great equalizer. It offers every citizen the potential to become an entrepreneur and a businessperson, to take more control of their life, and to become a prosperous and engaged member of the community. If we believe in the vision of a

Knowledge Democracy, it must be more than teaching people to buy books and CDs online. But to achieve this greater vision, it also means that communities must begin putting more effort into consensus-based decision making focused on strategies of win-win and abundance rather than the old economy approach of top down decision making focused on strategies of win-lose and scarcity.

There will be many new uses of technology in the community

Wireless will be widely used alongside of or in place of wired technologies.
Many kinds of local information and local services will be available via next generations of portable wireless devices. Everything from emergency services to entertainment information will be available on next generation wireless devices.

A robust telecommunications infrastructure and technology savvy citizens will create new business opportunities we cannot even imagine today. As all video, television programming, and telephone services move to the Internet, businesses, citizens, and local government will have many new opportunities to transform the way we work, play, and promote the common good.

This task force will help ensure that those next generation wireless and wired services are available to every citizen of the Commonwealth. The residents of places like West Point in southeastern Virginia and Haysi in southwestern Virginia should have the same access to wired and wireless services as their neighbors in Norfolk and Alexandria, and at comparable prices.

Key success factors

Leadership at the local level is critical. If every citizen of the Commonwealth is to be connected to and participate in the Information Economy, local leaders have a responsibility to ensure that their community has:

- a robust broadband infrastructure,
- that this broadband infrastructure offers citizens and local businesses competitive and affordable choices among access providers and service providers,
- that local government services are online and available to citizens,
- that every community has a community network to provide technology support to community and civic groups, which provide the backbone of the community and which enhance and enrich community life.

Local leaders must recognize that some modest investment in telecommunications may be

necessary to create a competitive marketplace for telecom services. In Blacksburg, a community-managed data exchange point we call the MSAP has lowered costs for private sector Internet Service Providers, made new broadband services possible, and has helped create new high tech jobs in the community.

Community leaders have a responsibility to citizens to adopt a futures-oriented approach to planning and development. It is no longer adequate to look backwards and base community planning on how things were done by our fathers and mothers. Instead, community leaders must begin asking how things ought to be in the future, and develop capacities in the community to deal with the challenges of our fast paced society.

Looking toward the future, studies we have conducted in Blacksburg strongly suggest that the Internet does not make you lonely. In fact, our studies show that once citizens and communities groups get connected with services like email, online mailing lists, and Web sites, attendance at civic and community meetings goes up. Let me repeat that: when people get online, they are more likely to get out of the house, more likely to attend community meetings, and more likely to speak up at those meetings.

I am especially confident that the rural communities of Virginia have a bright future. But I think there are three critical requirements. First, rural communities must have a robust, affordable broadband telecommunications infrastructure. In the old economy, proximity to an Interstate highway determined whether or not rural communities prospered or withered away. In the Information Economy, proximity to high bandwidth Internet access will determine whether rural communities prosper or wither away. Community networks create create the competitive marketplace to make that happen.

Second, rural communities must be attentive to quality of life issues. Virginia's rural communities offer outstanding recreational and sporting opportunities, and as development increases in rural areas because of new Information Economy businesses, communities must be attentive to growth and planning issues to preserve the environment that made those communities attractive in the first place.

Finally, we need to make sure that we do not create regulatory roadblocks to innovative public/private partnerships like the one in Abingdon. Rural communities must be free to create these competitive telecommunications marketplaces through modest community investments.

When the Blacksburg Electronic Village started, we had a very simple mission: get everyone connected. Today, I think the same goal applies to the eCommunity Task Force--Get every citizen in the Commonwealth connected.

Andrew Michael Cohill, Ph.D.
Design Nine
http://www.designnine.org/
cohill@designnine.org

Dr. Andrew Michael Cohill is an internationally recognized information architect. Cohill was the Director of the Blacksburg Electronic Village (BEV) for Virginia Tech, and an adjunct faculty member in the Department of Architecture. He has an educational background in computer science, ergonomics, and architecture. His career in computing and networked information systems covers more than twenty-five years work in private industry, consulting, and academia. Cohill worked for many years in the private sector before moving to Virginia Tech. With extensive publishing experience, years of information systems design, and a broad background in telecommunications from his work at Bell Labs and AT&T, he brings a shrewd and seasoned approach to strategic planning and community development. He now works as a technology advisor to communities and organizations.

He has published numerous papers, articles, and book chapters. He is an editor and author of *Community Networks: Lessons Learned from Blacksburg, Virginia* (now in the 2nd edition, and recently translated into Japanese). Cohill is active professionally in the Environmental Design Research Association, the Association For Community Networking (AFCN), and the Association for Computing Machinery. He serves on the board of directors of the AFCN and is the current President. He works on a consulting basis regularly with communities and private industry, specializing in the development of strategic plans for technology. He is well-known internationally for his work, and travels regularly to work with communities on technology issues. Cohill is in great demand as a speaker because of this ability to explain technology clearly, and talks widely on community development and technology issues.

The Blacksburg Electronic Village is the most successful community network project in the world. More than 87% of the town population is connected directly to the Internet via modems and high speed connections. More than two-thirds of the local business community uses the Internet to advertise products and services. Cohill has guided the development of BEV Internet services since the start of service in 1993, well before the Internet became a household word.

The Blacksburg Electronic Village has been a model for the development of community networks around the country, and much of Cohill's efforts are related to teaching others how to incorporate technology into the community and economic development efforts. The project has been covered widely in the media nationally and internationally, with more than 200 articles, including The New York Times, the Houston Chronicle, Time magazine, La Monde, and many other publications. Television coverage has included the NBC Nightly News, CNN, the Today Show, the Disney Channel, and the Discovery Channel. The Blacksburg Electronic Village was the subject of a cover story in the February, 1996 issue of Esquire and the subject of a cover story in the February 25, 1996 issue of USA Weekend, a Sunday supplement magazine distributed nationally. More recently, Cohill's work has been covered in Newsweek International, and overseas in French, German, Italian, Japanese, and Persian.