Why Broadband?
A Community Perspective

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Je vous entretiendrai aujourd'hui de quatre sujets. D'abord, je répondrai à la question suivante : "Pourquoi les communautés doivent-elles investir dans un réseau à haute vitesse?" Dans un deuxième temps, je donnerai quelques conseils pratiques aux communautés pour les aider à créer un environnement propice incitant les entreprises à investir dans un réseau à haute vitesse. Troisièmement, à quoi devons-nous nous attendre pour les prochaines années? Certains croient, et j'en fais partie, en la création d'une démocratie basée sur la connaissance. Dans cette "démocratie de connaissance," les personnes et les organisations auront les compétences, les outils nécessaires et l'accès aux réseaux favorisant une vie communautaire prospère. Finalement, j'énoncerai quelques concepts que je considère importants pour l'avenir des communautés et de leurs habitants.

There are four things that I want to talk about today. First, I want to answer the question, "Why should communities invest in broadband?" The second thing that I want to do today is to provide some practical steps that communities can do now to begin creating an environment that will encourage business investment in broadband. Third, I want to talk about where we are going. I and others believe our goal to create a knowledge-based democracy. In the Knowledge Democracy, every person and every organization will have the skills, the information tools, and the network access to have a prosperous life and to contribute to the health and wealth of their communities. Finally, I want to talk about some ideas that I believe are important to the future of communities and the people that live in those communities.

Why broadband?

In the 20th century, economic development and community development reflected the nature of of manufactured goods--all were rooted in physical places. Manufactured goods, compared to the weightlessness of information, are difficult and expensive to move. Collaboration and cooperation across regions and across political boundaries was, like moving manufactured goods, hard to do and hardly seemed necessary.

The Internet has created a new and different economy, in which goods and services have no weight, and are not tied to place. Political boundaries are invisible to the Internet. Does this mean that political entities no longer have relevance? Just the opposite is true, but in a way that most of us do not yet understand fully.

Thomas Jefferson's original vision for democracy in the United States was that most power and influence would be concentrated at the local level, with limited roles for state government, and an even smaller role for the federal government. In fact, Jefferson would be depressed and dismayed at the growth in state and federal governments; it is neither what he envisioned nor what he planned.

Both in the United States and in other countries, telecommunications and related information services are provided and regulated by a confusing array of public and private entities, with pricing structures that are more reflective of the cost of government regulation than the actual cost of delivering a particular service like voice telephony or Internet access.

As deregulation of telecommunications becomes more common, the potential exists for local and regional collaborative ventures in telecommunications that return much control to local communities, and out of the hands of national regulators and large telecommunications conglomerates. The current situation in most countries, in which these providers offer services countywide or across multiple regions, leave local communities with little control

or influence over the kind of services they receive or the cost they pay. If communities wish to participate in the Information Economy, modest investments in telecommunications infrastructure will create great benefits. I am not advocating a great new public enterprise, but rather, a public/private partnership where the modest public investments attract much larger private investments. In Blacksburg, virtually all of the high speed access in the community has been built by the private sector. The publicly supported community network created demand for high speed access, which in turn brought private sector companies into the community.

Futures orientation

We make investments in telecommunications not for what we can do today, but what we want to do in the future. I believe many telecommunications providers in the United States have underestimated future bandwidth needs by at least an order of magnitude. When large telecommunications providers talk about broadband and what they think that means to them, they talk about one to two megabits to the home and small business. I believe the proper target is 25 megabits, or about ten times more. If we talk about that in today's network protocols, it means every home and small business has to have Gigabit Ethernet connectivity. We need to build a robust telecommunications infrastructure in our communities so that when voice, television, radio, and all other information mediums move to the Internet-based transport system our residents and businesses have what they need to compete in the global economy.

Everyone will be a publisher

I believe that our destiny is not to be consumers and only consumers. I do not agree with the notion that the highest purpose of the Internet is to become a a kind of bloated Amazon.com, where everything is for sale. We want broadband in every home in our communities so that everyone has the opportunity to be both consumer and producer. Inexpensive, ubiquitous broadband gives everyone the opportunity to become a publisher. What they publish is less important than the principle that we should all be free to pursue our

dreams. Broadband should not be the walled garden that some imagine, but should be more like a town commons, where a rich assortment of buyers and sellers can come together at will.

It is about control

Like many of you, about thirty years ago, I read George Orwell's prophetic *1984*. As we know now, most of what Orwell predicted has come to pass. But the big surprise is that bib Brother does not appear to be the government. In the coming years, we may have to increasingly rely on government to protect our rights from predatory commercial contracts to that seek to limit our basic freedoms like the right to own property and the right to free speech.

In the April [1] issue of Red Herring, Mark Hall the vice-president of RealNetworks, complains that, "Broadband is not the heroin-like addictive form of entertainment that television is, but we are only a couple of years into it." In other words, RealNetworks apparently has a corporate goal to turn the Internet into TV. Now this is not entirely surprising; that much has been obvious for years. What is appalling is that these companies are using the language of drug dealers to talk about their customers. And in fact, what RealNetworks has revealed is that they don't want an honest marketplace relationship with their customers; rather, they want to turn them into addicts.

In a recent Associated Press article [2] carried nationwide in the United States, the software produced by the company FaceTime was described. FaceTime's product allows organizations to snoop on instant messaging conversations. The software can continuously monitor all the IM conversations taking place in a business or government institution, and alert managers if someone has said something deemed objectionable. One business manager who uses the software noted that while he does not have time to read all the conversations, he archives them all "in case it's needed." Needed for what? To do a hatchet job on an employee at a later date? These are tools for lazy managers who are not doing their

job. But what is worse, it removes all privacy. While we can't imagine having microphones and tape recorders running all day long at the water cooler or the FAX machine, why are we accepting this electronic monitoring so complacently?

Let me offer another scenario. Imagine that the cable company offering broadband access in your town employs the IM monitoring software I just mentioned. They use it to look for customers making disparaging remarks about the company. Any customer that does has their Internet service cut off. When outraged customers complain about losing service, they discover that fine print in their 14 page service contract allows the company to do this.

Practical steps that communities can begin now

Developing the marketplace

Community networks are widely misunderstood. I am often told, often by economic developers, that they do not see the relationship between community networks and jobs. Many people visit the Blacksburg Electronic Village Web site and see mostly a civic focus. The weakness of community networks is that they are mostly invisible. A community that will readily invest half a million dollars in a shell building to attract a Manufacturing Economy business will often refuse to invest fifty thousand dollars in a community network effort to attract Information Age businesses. Community networks help create a marketplace for network access and services.

I view it as the Information Age farmer's market. We all know of communities that have a farmer's market. A farmer's market, usually located in a public space, brings together buyers and sellers. The modest public investment in the market space--stalls for farmers, parking, and other amenities--facilitate commerce and gives local producers an opportunity to conduct business with local buyers. So it is with the community network--community

networks bring together buyers and sellers, but ideally, most of the transactions stay in the private sector, where jobs are created and a workforce with Information Age skills is created. A community-wide network system has two key components.

The *community network infrastructure* addresses network access--how citizens, businesses, and organizations in the community get connected to the network. The community network infrastructure can include subsystems like duct; fiber and copper cables; wireless systems; collocation facilities; network hubs and routers; and internal building wiring, including the jacks in the wall to which individual computers are connected.

The *community network information services* address what citizens, businesses, and organizations do with the network once they are connected. These services are typically provided to citizens, local government, community groups, and non-profits. Businesses should purchase their services from other businesses to promote local economic development.

Communities choose to make modest investments in *network infrastructure* to:

- Create a level playing field for private companies offering telecommunications services.
- Create a competitive marketplace that provides telecommunications users in the community a variety of choices in firms, pricing, and services.
- Promote the long term economic vitality of the community by ensuring that local businesses and other organizations have high bandwidth telecommunications services at affordable prices.

Communities choose to develop and manage *information services* to:

- Create a professional, high quality online presence for the community that presents the community as an attractive place to live and to work.

- Support citizen access to local eGovernment and eGovernance services.

- Ensure that every citizen and business in the community has the skills and knowledge needed to participate fully in the Information Economy.

- To help nurture and to support a futures-oriented vision for the community with the goal of sustaining the community as a great place to live and to work.

- To give every citizen and civic group in the community an opportunity to have an online presence that is affordable and that protects the privacy of all users.

The development of the network infrastructure and the development of the information services are two activities that can be pursued both independently and in parallel. That is, neither is dependent on the other. However, the information services portion represents the minimum level of activity needed to help the community pursue its long term, futures-oriented vision. Any community of any size, regardless of financial resources, can make a modest and effective effort to develop and sustain community-based information services. Training citizens to use the network creates not just demand for private sector services but also helps develop a skilled workforce.

Start a community network

Community networks provide citizens, businesses, local governments, and public institutions like schools and libraries with technology services and expertise affordably.

The work of the community network is to listen to the community, work collaboratively to identify needs, and to provide the technology expertise and services infrastructure to apply technology creatively to meet needs and help solve community problems. Community networks play several roles:

- Support the "knowledge democracy" and create public spaces in cyberspace. In the past, communities have routinely invested in public spaces like town halls, recreation centers, parks, schools, and libraries. Communities need the equivalent in cyberspace. Community network services include Web site hosting; email accounts; mailing lists; online calendars; discussion forums; online directories of people, community groups, and businesses; and other kinds of online services needed by the community.

- Act as a community technology resource and provide a source of unbiased technical expertise and advice for local governments, schools, libraries, and civic groups trying to understand how to apply and use technology.

- Support technology education and training efforts in the community. Identify training and education needs, partner with community technology centers, schools, colleges, and libraries to teach citizens about technology. CNs can provide community technology centers with Internet access and core services like Web hosting and email accounts.

- Help communities develop a 21st century network infrastructure that will enable them to participate in the Information Economy. In this role, CNs would rely heavily on collaborative efforts with other organizations in the region, working together to create a robust telecommunications system that attracts private sector investment.

- Assist a community shift its economic development focus to the new information

economy. Traditional economic development approaches may not meet the need of high tech companies. Community networks send a powerful message to companies considering relocation, and that message is that the residents of the community are Internet-savvy and that they have the technology skills needed in the Information Economy.

Community networks can benefit the community by offering non-profits, community groups, and local government a wide array of services, and they can reduce the costs of service delivery. Community networks have great potential to be self-sustaining by providing technology design and consulting services to local government and nonprofit.

Find partners and collaborate

In my work with communities, I find that virtually all problems are ones of cooperation and collaboration, or rather the lack of those two activities. Community investment in broadband is never limited by technology; it is limited by an unwillingness to collaborate. It is crucial to remember that the network does not recognize political and geographic boundaries. In the physical world, it sometimes makes sense to let politics and political boundaries define the limits of infrastructure development. One town's water system is useful even if is not connected to the adjacent community. But that is not true of networks. Networks follow Metcalf's Law, which states that networks become geometrically more useful as more people as connected to them. In Canada, there are two excellent examples of collaboration: the first is Quebec's CEFRIO, and the second is Ottawa's OCRI. Both efforts have successfully brought together local and provincial governments, businesses, and universities to develop a vision and to implement projects.

The network also love aggregation for another reason. As more people are interconnected, it is possible and likely that you can drive costs down, sometimes dramatically.

Collaboration is not some “feel good” idea--it makes good economic sense. Collaboration and aggregation reduce costs for both network service providers and network access users. But it goes farther than that; aggregated demand can often result in order of magnitude increases in network bandwidth available to users.

Develop a vision

Over the past nine years, I have found one factor in common among all successful community projects--a shared vision for the future. This is independent of the size of the community, independent of the local economy, independent of the wealth (or poverty) of the community. If the community can come together and reach consensus on a futures-oriented vision of what the community ought to be, that community will be successful. Once a community shares that common vision, the goals, objectives, and outcomes flow naturally from the shared vision. So I will start by proposing a vision for technology.

The purpose of technology is to support and enhance human relationships.

Put another way, the purpose of technology is not to encourage people to have a close, personal relationship with their computer. Nor is it to encourage people to use software that requires them to constantly ship a significant fraction of the wealth and prosperity of their community to a few companies that are using their size and power abusively. The purpose of technology is not to encourage people to spend hours installing overly complicated and complex software that crashes frequently just so they can write a one page letter to someone on the town council. The purpose of technology is not to create "walled gardens" that encourage people to buy more stuff while locking them out of the opportunity to publish and read whatever they like. Every community that wants broadband must first articulate a vision of what they want their community to be like--not next week, or when the fiber is installed, but what the community will be like in ten or twenty years--this vision must describe, simply and clearly, what people will be doing with technology, how they will be using for business, personal, and civic use, and how the technology will make that

community a better place to live and to work. If communities take the time to develop this vision, if they take the time to develop a consensus in the community that makes it a shared vision, that community cannot fail in whatever it tries to do.

Do something now

One of greatest obstacles has nothing to do with technology. It is simply the fear of doing something that may turn out to be wrong. I get asked constantly if I can guarantee that community investments in networks will pay off. I am very sorry, but I cannot guarantee this. The future of communities is dependent on a whole series of interlocking issues that goes far beyond buying some fiber cable and sticking up some wireless antennas. Communities could spend a small fortune on broadband infrastructure but if they have not transformed their economic development strategy, nothing will change. A community could run fiber to every home in the community, but if they are not also working on the demand side to create rich local content and savvy buyers who understand the value of that broadband connection, nothing will happen. In answer to that request for a guarantee, what I tell communities is this: "It is risky to make community investments in telecommunications. But it is more risky to do nothing. Communities that do not invest, communities that do not take some risk and try some things, knowing that some of the things that they try might fail take the greatest risk of all. In the United States in the second half of the twentieth century, communities that were bypassed by the Interstate highway system withered and died.

Communities today are in same position with respect to telecommunications--telecom is the highway system of the twenty-first century. You may need to build your own entrance and exits ramps. The good news is that this is much less expensive than roads. Technology is not a panacea for economic development challenges, but without a robust telecommunications infrastructure, nothing will happen. Tom Peters[3], the author of *In Search of Excellence* and arguably one of the most influential management consultants in the world, has very simple advice for business executives today: "The only way to survive these

days is to do some stuff and see what happens. Every now and then you do stuff that, for reasons that are completely unspecifiable, turns out to be big stuff, as opposed to little stuff. You just have to make sure that there is enough stuff going on that some big stuff happens."

The Knowledge Democracy

What is the Knowledge Democracy?

The rise of the Information Economy has created simultaneously two kinds of organizations that have had enormous impact on communities and individuals--the global enterprise and the microbusiness.

The free flow of information has enabled global enterprise on a scale that was scarcely imagined twenty years ago. Even companies that sell real goods (of any kind) are manageable as global enterprises only because the global telecommunications network makes it possible to aggregate in real time the massive amounts of data needed to keep the parts flowing to factories, to keep finished products moving onto trucks and planes, to keep the trucks and planes carrying those goods to their destination, and to keep the stores in individual communities stocked with the right level of goods.

The dilemma for communities is that it is often very difficult to have a conversation with or maintain a relationship with a global enterprise whose headquarters may be many states or many countries away. And if conversations occur, they are often extremely complex because of the many layers of company managers and company lawyers that may be required just to talk, let alone reach consensus on an issue.

Conversely, the fluidity of information and ease of communications has led to many more individual and small enterprises that often have tremendous impact on the community. Increased ease of information distribution has led to an increase in nonprofit and

community groups that use highly-organized and sophisticated technology to argue single issues before local government. Local government leaders, exhausted by the barrage of conflicting information, the intense demands for individual consideration at the expense of the common good, and the threat of costly litigation from both business and community groups, often end up doing nothing or simply taking the path of least resistance (that course least likely to provoke a lawsuit). In the end, the community disintegrates because relationships have become formalized in lawsuits or do not exist at all. Community becomes an exercise in shouting, rather than speaking, listening, and understanding.

The concept of the Knowledge Democracy involves three key points:

- First, the acknowledgment that telecommunications and the rise of the Internet have permanently altered the way people acquire and use information. In the past, distribution of information about community issues and affairs was expensive and tedious. Information was often passed informally through the maintenance of human relationships in the community. Today, information is widely available from many sources, and human relationships are no longer needed to obtain information.

- Second, a civil society trying to make decisions will be most effective when the process of finding the common good is regarded as a mutually interdependent effort in which the goal is to help all parties to the process succeed. This approach requires constant maintenance of relationships through mutual respect of the opinions of others, gained by speaking, listening, and understanding.

- Third, that the American model of democracy works best when approached as an ongoing set of conversations about issues, leading to a consensus within the community about the best course of action. These conversations are purposeful, parallel processes designed not just to to talk about the issues but also to reach consensus on how the community should proceed. These processes are aimed at

rebuilding trust by letting citizens participate fully in all aspects of deciding what to do about a key issue.

Representative democracies are intentionally designed to avoid the tyranny of the majority by using elected representatives to mediate these conversations and make decisions based on understanding the content of those conversations. Representative democracy permits lawmakers to make decisions that may be at odds with a majority of individuals, but that may best represent the common good. Note that a key feature of representative democracy, as compared to other forms of government, is that it permits such an outcome, even though making decisions for the common good is not an automatic outcome of the process.

A community operating on the principles of the Knowledge Democracy will:

- Make equitable use of information technology to encourage broad participation in conversations by as many individuals and organizations as possible. Information technology will also be used to gather, interpret, and disseminate widely all opinions and information about an issue, to those interested individuals and organizations.

- Make a commitment to place the highest priority on human relationships, which are the basis of a healthy community. Participants in community discussions will agree to speak with care, to listen with respect, and to make every effort to understand the needs and wants of others (even if they disagree).

- Make a commitment to seek consensus on issues and to respect the basic principles of representative democracy, rather than automatically resorting to litigation when outcomes reflect a consensus for the common good rather than self-serving wants.

Finally, in the Knowledge Democracy, we must learn to distinguish between information and knowledge. While we talk about the Information Age, information is not the problem. We have plenty of information; what we usually lack is knowledge. And what is knowledge? Knowledge is on the path to wisdom. In fact, I think we can talk about the mathematics of wisdom.

- Data + Structure + Cognition = Information
- Information + Context + Cognition = Knowledge
- Knowledge + Experience + Cognition = Wisdom

The common element in these equations is cognition--what happens inside our heads. This cannot be duplicated by a computer, no matter what people selling this stuff tell you. A handheld GPS is not much good in helping you get home if you forgot to put fresh batteries in it.

Ideas

Jim Salmons and Timlynn Babitsky of the SohoDojo[4] describe what they call the dejobbed small business. According to Salmons and Babitsky, the traditional small business person has a single job that they do; this business person gets up every morning and does the same set of tasks every day and has a single revenue stream. The dejobbed small businessperson has no regular job--hence the notion of dejobbed. Instead, the small businessperson of the future has multiple revenue streams, and there is a set of tasks or work associated with the maintenance of each of those revenue streams. One of the other characteristics of this dejobbed small businessperson is that they work out of their home.

What does this notion of the dejobbed small business have to do with broadband? In the United States, depending on whom you ask, between 65% and 90% of new jobs are created by small businesses. If you embrace that statistic and the notion that we are going to have many more dejobbed small business people working out of their homes, full time, always

on, reliable broadband services to residential neighborhoods becomes a critical goal for economic developers.

Chaordic alliances

Dee Hock[5], the former CEO of VISA, the multinational credit card company, has coined the term *chaordic alliance* . A combination of the words *chaos* and *order*, Hock's vision is to create a new organization that is based not on traditional, hierarchical, topdown decision-making, but rather on shared purpose and consensus.

A chaordic alliance does not rely on heroic leadership to make decisions (and having the organization blindly follow), but rather the alliance does only those things that all the partners agree to in advance--that is, the organization initiates actions and activities only when all members of the alliance agree. This is a fundamentally different approach that discards the I win--you lose antagonism for a collaborative model based on I win--you win. Consensus is most likely to be reached when all parties find something of value in the outcome.

A chaordic technology alliance would have three primary, equal, and autonomous organizations, each with its own goals and services. These three organizations are:

- The Community Technology Center (CTC) which provides intra-community services. There may be one or more CTCs in a community.

- The Community Network (CN) provides services across an entire community, and may collaborate on programs and services with local CTCs.

- The Regional Technology Alliance (RTA) provides services across an entire region, and works collaboratively with CNs and CTCs on service and infrastructure projects too large for any individual CN or CTC to handle alone.

CTCs would continue to be independent organizations, but they find it in their self-interest to collaborate with the local community network on projects or to share service costs (e.g. a community network may run a mail server for several CTCs). Similarly, CNs may collaborate with CTCs and other CNs as needed. The Regional Technology Alliance provides an organizational mechanism to facilitate the "coming together" of individual projects.

Millennium Centers®

There is more to broadband than fiber cables and wireless towers. Rural communities and urban neighborhoods throughout the world are grappling with the aftereffects of the changes in retailing. As "big box" stores have replaced small businesses, neighborhood shopping districts and rural downtowns have had great difficulty finding new uses for the the space that attracts visitors and sustains the community. As part of the effort to help our towns and cities make the transition from the Manufacturing Economy to the Information Economy, we must not only put a robust broadband infrastructure in our downtowns, but we must also think differently about how we design and reuse our buildings.

In North Carolina, the Communities of the Future[6] organization has proposed the concept of the Millennium Center®. Millennium Centers are multipurpose buildings, as opposed to single use buildings. Let me give you an example of the current way we do things. I was in a remote, rural community in New Mexico recently; this little town had two new buildings--a post office and health clinic. Both were attractive buildings just a few hundred yards apart on the main road through town. Each had its own parking lot. And someone going to the health clinic will never stop and talk to someone going to the post office, and vice versa. By building two separate buildings, not only was the opportunity for casual social interaction lost, the cost of providing those two structures was much higher than if both had been combined in a single building. Both buildings also have Internet access, at higher cost than if that access had been aggregated. Remember that the role of technology is to support

human relationships; our buildings need to do this as well. The vision of the Millennium Center is to create buildings that nurture and support community by intentionally designing them for reusability and multiple purposes. A typical Millennium Center in an urban neighborhood or small town might include:

- Anchor tenant office space (approx. 1/3 of building).
- Reconfigurable office spaces for non-profits, entrepreneurial and incubator small businesses.
- Telecommunications and network center, including wireless access for the surrounding neighborhood.
- Computer lab space for teaching and learning activities, including business use--the dejobbed small businessperson needs meeting space outside the home.
- Meeting rooms for use by tenants and the public.
- Open space (atrium style) for casual meetings, informal meals, etc.
- Out patient health care, counseling, etc.
- Health and wellness center.
- Exercise and fitness center.
- Adult and/or child day care.
- Casual meal services (snack bar, deli-style sandwiches, gourmet coffee, ice cream, etc).
- Community network offices.
- High bandwidth Internet and network services as a building amenity.

One of the best examples that I have seen of this kind of thinking is right here in Canada, in Bromont, Quebec. When Bromont initiated a community network project and needed office space for the CN staff, they thought broadly about community needs and built a beautiful multipurpose building that serves as a welcome center for the community, houses several nonprofit offices, has meetings spaces for public use, shares high speed access among the tenants, and provides public access computers. One of the most interesting results from Blacksburg is the effect of the Internet on civic engagement. Both formal and informal

studies suggest that the Internet does not make you lonely. In fact, we see just the opposite. As community and civic groups go online and organize their membership with tools like the Web and mailing lists, attendance at physical meetings goes up. The Millennium Center

concept embraces the idea that we are still going to come together, to work, to play, to plan the future of our communities.

Summary

We live in a time when technology is becoming not just ubiquitous but pervasive--nearly every device we touch at home and at work may be "wired" in just a few years. Most of this wiring is being done with little or no thought about the consequences and effects on individuals, communities, and the common good. Dee Hock asks:

Is this how things ought to be?

The work of community networks is to ensure that technology supports human goals and aspirations, and that technology supports the growth and development of human relationships (not machine relationships).

Résumé

Nous vivons dans une ère où la technologie devient non seulement omniprésente, mais aussi envahissante. Presque chaque appareil dont nous disposons à la maison ou au travail sera peut-être “branché” d’ici quelques années. La plupart de ces branchements sont faits sans ou avec très peu de préoccupations concernant les conséquences et les effets à long terme sur les individus et les communautés. À ce propos, Dee Hock s’interroge :

Est-ce comment les choses doivent être?

Le travail des communautés branchées est de s’assurer que la technologie supporte la croissance et le développement des “relations humaines” et non des “relations de machines”.

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For more information

The Knowledge Democracy Center
http://www.knowledgedemocracy.org/

Communities of the Future
http://www.communitiesofthefuture.org/

SohoDojo: Martial Arts for the Small Business
http://www.sohodojo.com/

North American Rural Futures Institute
http://www.narfi.org/

Ottawa Center for Research and Innovation (OCRI)
http://www.ocri.ca/

Centre francophone d'informatisation des organisations (CEFRIO)
http://www.cefrio.qu.ca/

Town of Bromont, Quebec
http://www.bromont.com/

About the author

Dr. Andrew Michael Cohill is an internationally recognized information architect. 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 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 completed his second term as President in 2002. 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, his shrewd insights on the future of technology, and talks widely on community development and technology issues.

The Blacksburg Electronic Village (BEV) is the best known community network project in the world Cohill guided the development of BEV Internet services since the start of service in 1993 through the spring of 2002. The Blacksburg Electronic Village is 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.

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