

INFO-AGE

PASSPORT

PROJECT

CANADIAN FREE-NETS: At a Crossroad on the Information Highway

INTRODUCTION

In recent years, terms such as *information highway*, *World Wide Web*, *cyberspace* and *e-mail* have become part of everyday language for many Canadians. The *Internet* has become the mantra of the 1990s, with everyone from prime ministers and premiers to teachers and school children scrambling to *get on-line*. While some have argued that the Internet is merely a passing fad destined to go the way of CB radios and beta video tapes, it is more likely that the Internet will follow the path of the telephone and television – creating a whole new paradigm of electronic communication and community for the 21st century.

Computer networking and the Internet continue to develop at a phenomenal rate. Millions of people around the globe now have access to the Internet and thousands more join each day. It has prompted the creation of new and technologically-driven companies which offer the latest in Internet software and services, and has opened thousands of new jobs in the process. It has also spurred the continued development of *Free-Nets* or *community networks*. For the past decade, these non-profit organizations have been providing access to and education about the Internet and all it has to offer. This report provides an overview of the Free-Net movement in Canada. In particular, it focuses on:

- 1) The *Internet*, its history, phenomenal growth and the technology behind it;
- 2) The *Free-Net* movement, its history and potential impact on the continuing development of the information highway in Canada; and
- 3) The *challenges* facing the Free-Net movement in Canada, their implications for the future development of the information highway and some of the *alternatives* available to meet these challenges.

The *Info-Age Passport*

Project is a three year joint

initiative of the Canada West

Foundation, the University of

Calgary and the Calgary

Public Library. It is funded in

part by the Kahanoff and

Wild Rose Foundations. The

purpose of the project is to

enhance public access to the

information highway, to

educate the non-profit sector

about the Internet and to

share the experience of

Calgary Free-Net

organizers and volunteers

with communities across

Alberta and Canada.

CANADA WEST FOUNDATION

25 years

EXECUTIVE SUMMARY

Long before the *Internet* became the buzzword it is today, *Free-Nets* or *community networks* were introducing people to the information highway. Free-Nets constitute one of the most important tools available for developing this technology to the benefit of every Canadian regardless of opportunity or economic status. As non-profits, Free-Nets focus on providing affordable Internet access and Internet-related education. Free-Nets dedicate much of their resources to developing "public space" on the information highway - space where non-profits and the community-at-large can share information and resources. Community networks also play a vital role in promoting community development.

Like public libraries, Free-Nets operate under the assumption that affordable access to information is a common good. As more information becomes accessible via the Internet, public access to it may become just as important to communities as having a public library. Indeed, Free-Nets have the potential to mature into a stable and vital component of Canada's 21st century infrastructure. However, Free-Nets have reached a crossroad in their development and face a number of serious challenges:

1) *The high cost of starting and operating a Free-Net:* The annual budget for a medium sized system can reach \$150,000. The annual cost of modem lines alone is over \$25,000 for many Free-Nets.

2) *Keeping up with technology:* The computer industry moves fast, but the world of the Internet proceeds at breakneck speed. The success of graphical browsers (software packages for accessing the Internet) has shifted the public's perception of what constitutes "basic Internet access." This has forced many Free-Nets to settle with offering education and access to technology which is out of date. Since the market for Internet-related technology is extremely competitive, Free-Nets have difficulty raising enough funds to pay for the high costs of keeping up. As well, securing equipment donations in such a market is difficult since there is very little surplus and the older equipment (i.e. 12-24 months) is still in use.

3) *Denial of charitable status and the impact on fundraising that this implies:* Every application by a Free-Net to Revenue Canada for registered charitable status has been denied, hampering the ability of Free-Nets to raise funds. While a recent court case challenging this decision did rule in favour of Free-Nets, it is unclear if this will pave the way to charitable status for all community networks.

4) *Potential for conflict arising from a perceived competition with commercial Internet providers:* This challenge is more *perceived* than *real*. As non-profit groups concentrating on community development and offering a different quality of access than commercial providers, Free-Nets are totally different entities. They introduce people to the Internet, and in so doing, they benefit commercial providers by helping develop a future market for them.

The key question is how Free-Nets can overcome the challenges they face and continue providing Canadians with education about the Internet and ensuring that universal and affordable access remains a primary feature of Canada's information highway. A number of steps have been identified:

1) *Free-Nets* must clarify what role they intend to play, establish their niche in the Internet world and more actively press the case that they are an essential community good. Free-Nets must also rediscover the benefits of cooperative action amongst themselves.

2) Free-Nets benefit *industry* by offering training seminars and developing the Internet market. Through partnerships or donations of unused computer equipment, industry can help maintain and expand community networks.

3) *Governments* need to realize that Free-Nets are an important source of policy advice. Granting them charitable status, expanding programs to cover Free-Nets and even donating excess bandwidth on government leased lines would provide a big boost.

SOME INTERNET BASICS

The term *information highway* has overrun our culture yet it remains ill-defined. To some, it means the *Internet* itself, while to others it means home shopping, 500 channel television, movies on demand or long distance learning via video conferencing. Whatever its meaning, it is generally agreed that today's Internet is only a glimmer of what the information highway could become in the future.

1. A Brief History

In 1969, the U.S. military initiated a project designed to build a sophisticated communications system by connecting or *networking* military computers with those of universities and commercial defense contractors across the United States. With the help of government funding, many other educational and research institutions began forming their own networks. The aim of these early networks was primarily educational and academic. Access was restricted to prohibit private or commercial use and *acceptable use policies (AUPs)* limited the information that could be transmitted to educational and research material only.

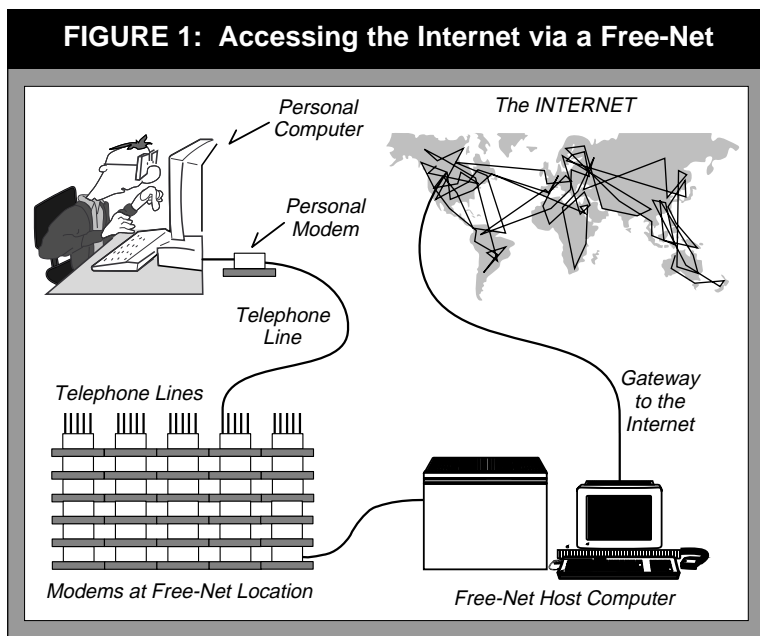
Eventually, these networks began linking with other networks. These larger networks then joined with other networks in other countries. As the web of networks grew, the educational and usage provisions of various AUPs became harder to police as more and more computers, bulletin boards and users came *on-line*. The *Internet* was born.

2. How it Works

The Internet is not a single computer network but a network of networks. In fact, the Internet is currently comprised of about 50,000 individual computer networks all joined together. Each individual network *within* the Internet

maintains the necessary equipment to support that single network as well as its connection to the larger Internet network. All of these networks and the computers within them are linked together by telephone lines, coaxial cables, fibre optics, routers, dedicated data lines and satellites. What allows these networks to work together are agreed upon technical *specifications* and *protocols*. In other words, all the networks speak the same language.

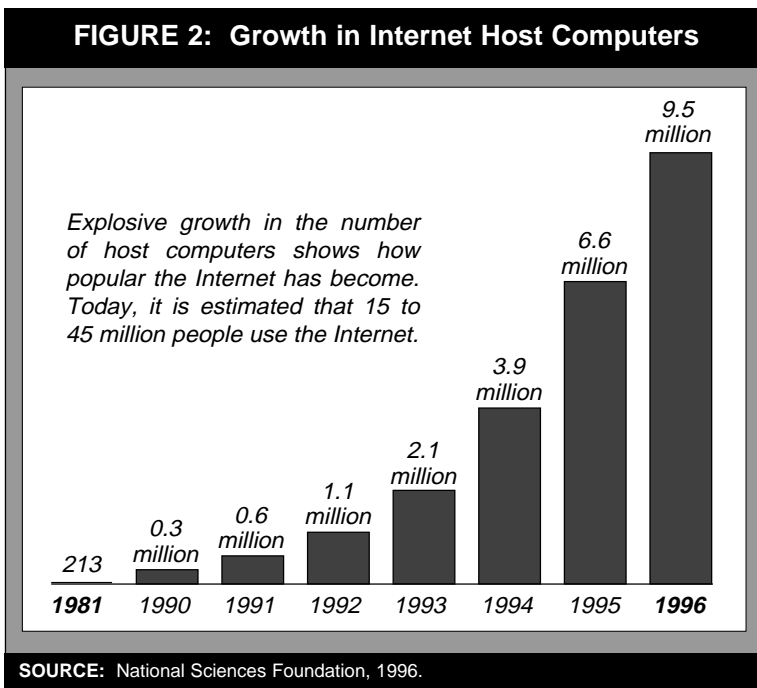
Using a personal computer and a modem, individuals can connect to this massive network of computer networks and gain access to all the other computers linked to it. As shown in Figure 1, a person sitting at home first dials into, or connects with, a host computer which has access to the larger Internet network. These host computers are usually found at the offices of a Free-Net, a commercial Internet provider or a university. Once connected, users send instructions from their personal computer through their modem and a telephone line to another modem connected to the host computer. In turn, the host computer sends the instructions to other computers on the Internet.



Anyone using the Internet can request information from another computer anywhere else in the world, provided it is connected to the Internet and is set up for such a purpose. Conversely, users can make information available to other users of the Internet and communicate with them via electronic mail. The process usually takes seconds – but maybe a few minutes or hours if the file is particularly large. While the technology underlying the Internet is complicated, it is really quite transparent for the end user.

3. Growth of the Internet

The number of computers connected to the Internet is increasing at an exponential rate. Figure 2 shows that the number of *host computers* (as opposed to personal computers) connected to the Internet grew from a mere 213 in 1981 to about 9.5 million by the beginning of 1996. This is important for two reasons. First, it means that there is a great deal of information on the Internet already, and this information continues to grow. Second, just as the *information* expands with more host computers, so does the number of *users*. The numbers are almost impossible to calculate, but estimates suggest a range of 15 to 45 million people with access to the Internet.



4. Implications of the Internet

The expansion of the Internet has taken place in an organizational vacuum. In fact, it is one of the few examples where anarchy has been operationalized. For example, one of the most popular aspects of the Internet is *e-mail* - the sending of electronic messages from one computer to another. E-mail was not even conceived in the original design of the network. Like most things on the Internet, e-mail arose spontaneously - someone wanted to send a message, so it happened. The implications of this freewheeling growth are far-reaching, but perhaps most important is that the Internet is oblivious to national boundaries. As such, regulating the networks that make up the Internet, or the people who use the Internet, is very difficult.

A good example of this was the media ban placed on the Paul Bernardo trial in 1994. While Canadian media were not permitted to publish certain information about the trial, there were no similar bans in effect outside Canada. Information regarding the trial was easily obtained via the Internet.

The U.S. government has also run into difficulty in its bid to stop the display of indecent or offensive images and words over the Internet. The *Communications Decency Act*, passed on February 8th, 1996, was struck down by a panel of three judges who ruled that the Internet deserved protection from such restrictions. Opponents of the bill argue that the Internet should be treated like print media, which is granted a great deal of latitude. Consumers act as self-regulators by determining what they wish to read. Proponents of the Act argue that the Internet should fall under the same rules as broadcast media, which is more stringent and where the focus is on regulating the broadcaster (or the information provider) rather than allowing consumers to regulate themselves. The U.S. government has said it will pursue the case to the Supreme Court.

5. The Race for "Ownership"

Because no one "owns" the Internet and its growth has been so phenomenal, the market for Internet-related technology is extremely competitive. Everyone wants to "own" a piece of the pie. Less than four years ago, users of the Internet were still faced with a text-based, command line environment analogous to the DOS system used throughout the 1980s. To view any graphics, users first had to download the files to their personal computer and view them later. In 1993, the first graphical interface was introduced for the Internet. The success of this product - *Mosaic* - led to the development of other graphical user interface packages, turning the Internet into a multi-media environment

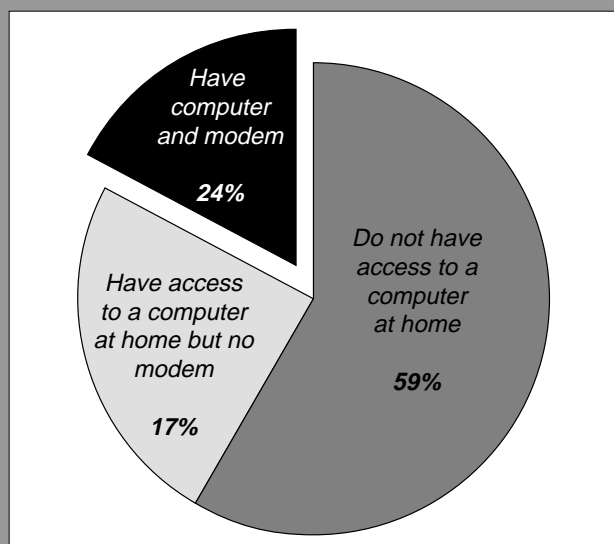
complete with graphics, sounds, photographs and movies. New versions of these popular software packages emerge almost monthly, bringing exciting options to Internet users and millions of dollars to software engineers. This represents a technological shift analogous to the move from DOS to the "point and click" environment of today's popular windows-based operating systems.

This explosive market has attracted the attention of the biggest players in the communications and computer industries. For example, *Microsoft* has entered the Internet business with its own software called *Internet Explorer* and its own computer network – the *Microsoft Network*. The market is also driving competition between traditionally separate industries such as telephone and cable companies, who are today competing head to head in providing access to the Internet. This type of competitive environment drives technological development, and could soon put today's most advanced Internet technology in museums beside the pony express mailbag and the telegraph.

6. Internet Access and Usage

Despite the attention given the Internet, the number of Canadians with access to it remains fairly low. A recent *Environics* poll found that about 60% of respondents did not even own or have access to a computer at home (Figure 3).

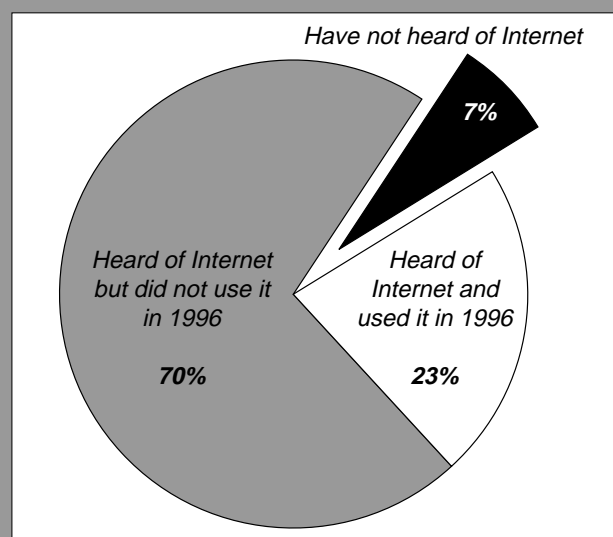
FIGURE 3: Home Access to the Internet



SOURCE: Environics Poll of October 1996.

Another 17% of respondents said they had a home computer, but no modem. This leaves only a quarter who could theoretically access the Internet from their homes. Actual usage of the Internet also remains low (Figure 4). The same *Environics* poll showed that 93% of respondents had heard of the Internet but only 23% said they had ever used it.

FIGURE 4: Use of the Internet by Canadians



SOURCE: Environics Poll of October 1996.

THE FREE-NET MOVEMENT

Anyone seeking to use the Internet and the information on it must first connect to a host computer which has a node or access to the Internet. There are primarily five different ways of doing this:

- 1) Paying a fee to a *commercial provider*;
- 2) Paying a fee to a larger network system such as *America On-Line* or *Compuserve* which has its own network as well as Internet access;
- 3) Accessing the Internet server of your business, company or employer;
- 4) Accessing the Internet server provided by an educational institution such as a university; or
- 5) Accessing the services of a *Free-Net* or *community network* which provides access to the Internet and other related Internet services on a non-profit basis.

1. Importance of the Free-Nets

Free-Nets are an important tool in developing the electronic highway for the benefit of *each* and *every* Canadian regardless of opportunity or economic status:

- 1) As non-profit entities, Free-Nets focus on providing affordable Internet access, whether it is through a traditional home computer and modem set-up or through *Public Access Terminals* – computers at public locations with Internet access available free of charge;
- 2) Free-Nets provide affordable computer and Internet-related education through seminars led by volunteers;
- 3) Free-Nets dedicate much of their resources to developing public space on the Internet – a place where non-profits and the community-at-large can share information and resources; and
- 4) Free-Nets play a significant role in promoting community development by encouraging Canadians to participate in this information technology and helping communities and non-profit groups share information and resources through it.

2. History of the Free-Nets

Long before the Internet became the buzzword it is today, the Free-Net movement was introducing people to the Internet and all it has to offer. The first Free-Net can be traced to Dr. Tom Grudner, who created an electronic bulletin board called the *St. Silicon's Hospital and Information Dispensary*. People could use their computer and modem to dial in and leave questions which were then answered by a family physician. The project quickly attracted the attention of local government and

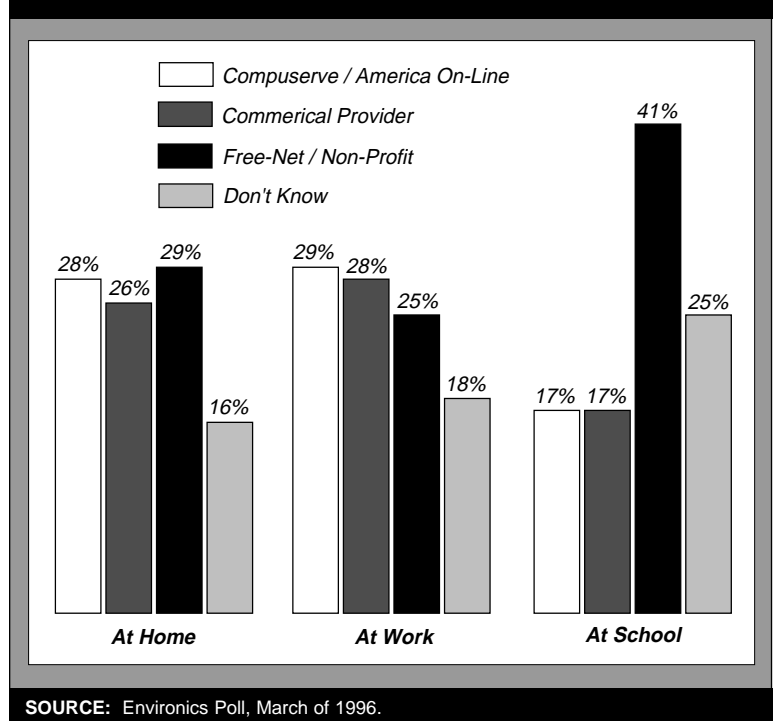
business, and with increased sponsorship, Dr. Grudner established the *Cleveland Free-Net* in 1986. By 1989, the system had over 7,000 registered users and was handling over 500 calls a day. After expanding the system to deal with the increased demand, the *Cleveland Free-Net* established the *National Public Telecomputing Network (NPTN)* to provide other communities with technical and organizational advice in building their community networks.

In Canada, the Free-Net movement began when the *Victoria Free-Net* opened its doors in November of 1992. The *National Capital Free-Net* in Ottawa followed soon after in February of 1993. Since that time dozens of other Canadian communities have set up similar community networks.

3. Usage of Canadian Free-Nets

Community networks have proven to be a popular way of accessing the information highway. In one *EnviroNics* poll taken in early 1996, almost 30% of those using the Internet at home said they accessed it through a Free-Net or some other non-profit group (Figure 5). Roughly the same proportion (25%) said they used a Free-Net to access the Internet at work. Not surprisingly, the highest usage of non-profit providers came from schools. Just over 40% of those accessing the Internet at school said they did so through a Free-Net or other non-profit group.

FIGURE 5: How Canadians Access the Internet



THE CHALLENGES FACING FREE-NETS

Many Canadians have already turned to Free-Nets to become acquainted with the Internet and all it has to offer. Assuming that the Free-Net movement continues to expand at the rate it has in the last five years, many more Canadians could develop their Internet skills through their involvement in a community network. But despite the popularity and significant growth of Canadian Free-Nets, they face a number of important challenges that have the potential to seriously jeopardize their ability to have a positive impact on the development of the information highway in Canada. These challenges can be broadly grouped under four categories:

- 1) *The high costs of starting a Free-Net and covering its operating costs;*
- 2) *The rapid pace of technological development and other hardware and software related issues;*
- 3) *Denial of charitable status to Free-Nets, despite their contributions to community development, and the effect on fundraising this implies; and*
- 4) *The potential for conflict arising from perceived competition with commercial Internet providers.*

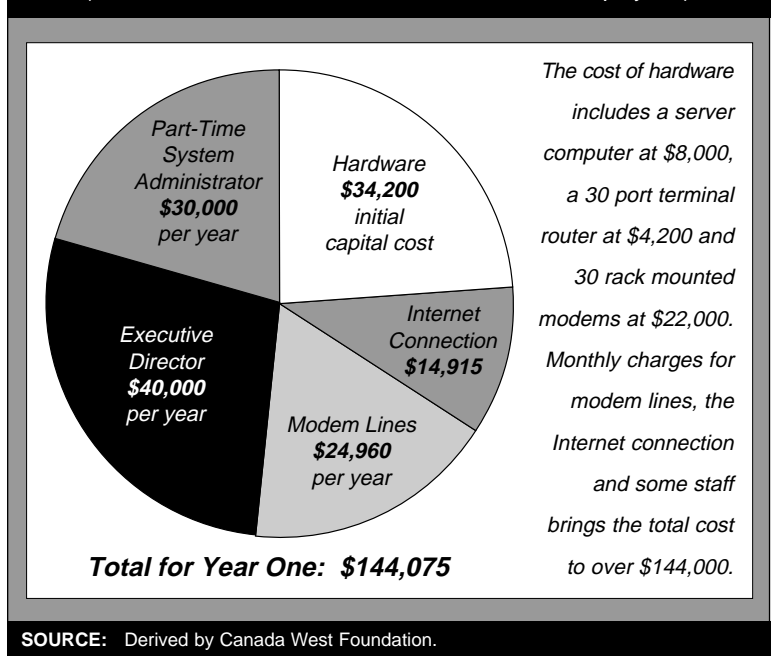
To ensure the success of community networking in Canada, these issues need to be resolved. The resolution of these challenges will, in large part, determine not only how the information highway develops in Canada, but whether or not it will do so in such a manner that all Canadians have the opportunity to benefit from these new technologies as a result.

1. Start-up and Operating Costs

One of the hazards of the Free-Net label is that it implies free access to the Internet. But in reality, providing access to the Internet is neither free nor is it cheap. While free access was a primary goal for early Free-Nets and continues to be the goal of some, increasing costs over the last two years have made the goal of providing totally free access prohibitive, requiring many Free-Nets to reconsider that original objective.

1) Hardware: Significant costs are incurred simply to secure the necessary hardware (Figure 6). In year one, the cost of the requisite hardware – even though it is the minimum required and low-end technology – can easily reach \$35,000.

FIGURE 6: First Year Operational Budget for a Free-Net
(Medium Size With 30 Modem Lines and Two Employees)



The high cost of hardware is a direct result of the current market dynamics for computers and Internet related products - a market fraught with shortages and plagued by high demand. This type of market inflates the cost of computer hardware. Early Canadian Free-Nets such as the *National Capital Free-Net* in Ottawa and the *Victoria Free-Net* were able to secure some free computers and modems to meet their initial equipment requirements. Those Free-Nets arriving on the scene at a later time would experience more difficulty in this regard, forcing them to raise larger amounts of cash to cover their initial hardware needs.

2) Staff: For many Free-Nets, what began as a “fun little project” run by an enthusiastic and dedicated band of volunteers has turned into a mammoth undertaking requiring more than just a few hours of volunteer service. In many cases, community networks have simply become the victims of their own success. Most Free-Nets have seen their systems grow exponentially in a very short period of time, and now face the onerous task of managing thousand of users, hundreds of volunteers and fundraising for an organization with a six figure budget.

Without staff who are paid to show up to work, just maintaining the ever-expanding organization, let alone developing it properly, becomes difficult. Most Free-Nets in Canada have now reached the stage where hiring at least some staff is necessary to properly operate their networks. In fact, 60% of all Free-Nets in Canada now have some paid staff. But hiring even a few people is no small matter.

To begin with, Free-Nets are non-profit organizations and the budgets are tight. In addition, the people required are professionals whose technical expertise is in high demand. For example, a system administrator can expect to be paid a minimum of \$40,000 a year. Depending on the size of the organization, there is also need for a project director or coordinator, whose salary can range from a low of \$30,000 to \$50,000 or more. For example, in 1995 the *National Capital Free-Net* in Ottawa, with 60,000 registered accounts, spent about 35% - 40% of its \$400,000 budget on staff. They have since had to cut back staff due to a dramatic decrease in funding. Volunteers are always the central figures for any successful Free-Net, but the need for some paid staff is becoming essential, leading to even higher costs for the organization.

3) Modem Lines: Unlike the costs of hardware and human capital – either a one-time cost or one that can be reduced through donations, discounts or volunteer service – the cost of modem lines is both ongoing and significant. Government regulations currently in place prohibit telephone companies from donating any time on their lines, leaving Free-Nets to raise the necessary funds to cover the monthly charges for each line entering and exiting their system.

As shown in Figure 6, a medium-sized network with 30 modems can expect to pay about \$25,000 annually for modem lines. Up to mid-1995, most Free-Nets were using *Centrex voice grade* lines, which are substantially less expensive than standard business telephone lines. Each Centrex voice-grade line costs about \$30 per month as compared to a regular business line at about \$72 per month. However, the assumption behind Centrex lines is that they will be used no more than 9.3 minutes (on average) per hour. Since most Free-Nets and other Internet providers can and do greatly exceed this time limit, telephone companies have argued that such organizations are breaking *CRTC* regulations regarding the use of these lines.

Some telephone companies have responded to the situation by shifting the Free-Nets and other Internet providers to the standard business lines. Other companies have offered Free-Nets and other providers access to new high-use Centrex lines, which cost slightly less than the regular business line - about \$61 per month. Either way, many Free-Nets are now paying double or even triple what they expected when they first began operating. The move has clearly caught many Free-Nets by surprise and added significantly to the costs of running their networks.

Only the Ontario Free-Nets have managed to avoid this change in service charges. They, along with other Internet providers, have convinced *Bell Canada* to delay plans to switch them to the more expensive lines pending an appeal to the *CRTC*. For these Free-Nets, there is much at stake, and even more for the Free-Net movement as a whole. More expensive lines would clearly force the two largest Canadian Free-Nets (Toronto and Ottawa) into charging for previously free modem access. Across the country, it would likely entrench higher costs of telephone lines, making it more difficult for Free-Nets to carry on their charitable activity, expand their systems and encourage more Canadians to participate in this new technology. Conversely, if the Ontario Free-Nets succeed in securing less expensive lines, other telephone companies may be forced to follow suit and offer the same service to all Free-Nets across Canada.

MODEM LINES: A Look at Costs Across the Country

Vancouver: The Vancouver Community Network (VCN) was paying roughly \$35 per line for their Centrex modem lines until the Fall of 1995 when BCTel shifted them to the standard business line. The VCN now pays about \$70 every month for each of its 51 lines.

Ottawa: In Ontario, community groups, Free-Nets and commercial Internet providers have banded together to try and stop Bell Canada from moving them to regular business lines. The National Capital Free-Net in Ottawa could see its line charges jump from \$23 per line per month to over \$60 a line. With 185 modem lines, this represents an increase of over \$80,000 per year in operating costs, which could very well spell the end of free modem access to the Internet in the Ottawa area.

Calgary: Access to the cheaper Centrex voice grade lines was never provided to the Calgary Free-Net Association. Until recently, the Calgary Free-Net was being charged \$72 for each of its 43 lines while commercial Internet providers were being provided the cheaper Centrex voice grade lines. Today, all Internet providers in Alberta, including the Calgary Free-Net, have been moved to \$60 lines. Like other Free-Nets, Calgary's original business plan estimated the costs of each modem line at \$35 per month. The dramatic increase caught the Calgary Free-Net by surprise.

There are essentially three types of funding models used by community networks:

1) Totally Free Access: This is the model envisioned by most Free-Nets when they first started. Because of escalating costs, only 12 of the 30 Free-Nets recently surveyed by Canada West Foundation have been able to maintain this laudable goal. One of those groups offering free access is the *National Capital Free-Net (NCF)* in Ottawa. This Free-Net is partly funded by government grants and user donations, but due to a dramatic decrease in government funding, the *NCF* has had to take a much more aggressive approach to seeking donations from users. User donations have provided the financial security needed for now, but the future of free modem access to the *NCF* is by no means guaranteed.

2) Membership Fees: Some Free-Nets have moved to a system which relies heavily on membership fees to cover the operating costs. These fees range from a low of \$20 a year to a high of over \$125 a year. At the Edmonton Free-Net, for example, the bulk of funding comes from the users themselves. When setting up an account on this system, users must register by paying a yearly membership fee which was originally set at a modest \$15 per year, but was recently increased to \$25.

3) Stratified Model: Somewhere in between the free and the user pay models are stratified funding systems like that employed by the *Calgary Free-Net Association*. In Calgary, users

can obtain free access by using one of many *public access terminals (PATs)* located at several public places in the city. The *PATs* have a dedicated connection to the Free-Net system, and users can log on for one hour intervals four times a day.

By paying a \$20 annual fee, users of the *Calgary Free-Net* can gain the same access (one hour intervals four times daily) by dialing in from a personal computer at home or work. A limited number of modems have been set aside for these users. For \$50 a year, one can become a member of the Free-Net, and gain access to the "members only" modem pool. Since this pool contains more modems, there may be less of a wait to access the system, users can log on for twice the regular time period and do so as many times as they wish. By becoming a member, one also gains privileges such as voting at annual general meetings or the opportunity to create personal web pages.

For many Free-Nets, trying to keep up with the financial demands has simply become overwhelming. On November 15, 1996, just three and a half months after opening its system to the public, Montreal's community network – *Libertel* – was forced to shut its doors. The *Toronto Free-Net* is currently losing thousands of dollars per month trying to keep up with the demands on its system. If more Free-Nets close shop because they cannot secure the resources necessary to support the public's demand for their services, the development of universal and affordable access to the information highway in Canada will be slowed dramatically.

A PROPOSED FUNDING MODEL: The Community Cable Option

The Public Interest Advocacy Centre (PIAC) recently forwarded a proposal to the CRTC outlining a new funding scheme for community networks. The proposal is modeled after the system in place for community cable channels, which have access to resources which the cable companies have set aside for community programming.

The rationale for the scheme is that community channels are non-profit entities which provide significant benefits to the local community. Since Free-Nets are similar entities, PIAC has proposed that companies involved in the Internet business (telephone and cable companies, commercial Internet providers) contribute 6% of their gross earnings to a fund, of which 2.5% would go to community networks or Free-Nets, 1.5% to the community cable channels, and a minimum of 2% for the development of Canadian content. It remains to be seen whether this model or some facsimile will be acceptable to the CRTC.

SOURCE: The Public Interest Advocacy Centre in Ottawa, Ontario. **E-mail:** 74051.3157@compuserve.com

2. Technological Innovation

The costs of starting a Free-Net and the task of raising funds to maintain it are compounded by a second challenge – keeping up with technology. The computer industry moves fast, but the world of the Internet proceeds at breakneck speed. Long term business plans are developed in terms of months rather than years, and what was cutting edge yesterday can be found at today's garage sale. Winners become instant millionaires while losers are tossed onto the trash heap.

Ironically, the pace of technology is as much a product of the Internet as the Internet is a product of technology. It is doubly ironic then that Free-Nets, which have played such a key role in introducing people to the Internet, have never been on the cutting edge of that technology. Community networks lack the financial capability to become a technology leader and have always focused on providing *wider* access rather than developing *better* access.

1) Basic Access: The key concern for Free-Nets is that the entire definition of *basic Internet access* has shifted. Until a year or two ago, the basic offering was a text-based, command line environment. There was little difference between the service offered by a Free-Net and that provided by a commercial provider, with the exception that a Free-Net would likely have fewer modems. But today's *graphical user interface* programs have left many Free-Nets struggling to provide what most would consider basic service. This has forced Free-Nets to make a choice:

- a) Settle with offering education and access to Internet software that is out of date, and in the process, recognize that a community network's ability to help Canadians take advantage of this new information technology will be diminished; or
- b) Find the time and financial resources to upgrade and expand the community network's system.

When building their networks, early Free-Nets simply borrowed existing server software. The most popular was *FreePort*, a program promoted by the *National Public Telecomputing Network (NPTN)*. While it was free, FreePort was inflexible, fraught with difficulties and required numerous software fixes. Most importantly, FreePort could only accommodate *text-based client software*, and it was never updated to accommodate all that the Internet would offer in the 1990s. In short, FreePort was the Ford Model A of the information highway.

As a result, most Free-Nets have now moved to *Chebucto Suite* or *Csuite* software developed by volunteers at the *Chebucto Community Net* in Halifax, Nova Scotia. Csuite can be configured to accommodate all of today's popular Internet services such as e-mail and web browsing and is available at no cost. Chebucto represents a good solution for most community networks. While considerable time and financial resources are needed to make the conversion from FreePort to Chebucto, most feel that the resources required to make this conversion are well spent.

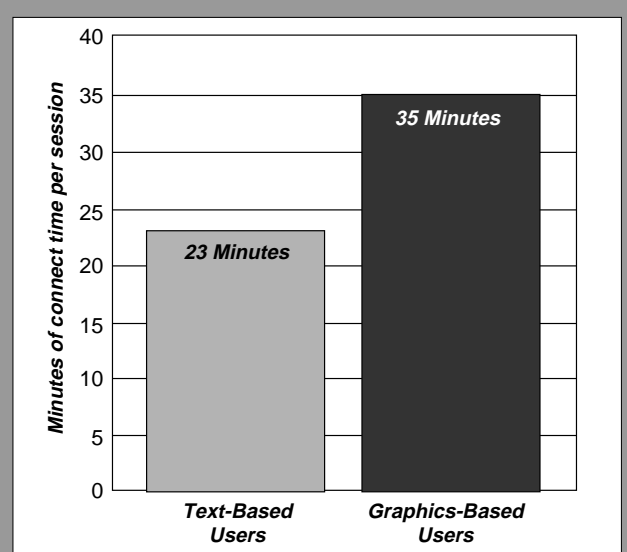
2) PPP Access: The biggest question on the technology front is whether Free-Nets should be moving up the next rung on the high-tech ladder and offer *Point to Point Protocol (PPP)*. Accessing the Internet via PPP has become the dominant service offering for most commercial Internet providers. The main difference between this option and the text-based solution traditionally provided by Free-Nets is that PPP users can take advantage of new *graphically-based* client software – the point and click environment of today's windows-based programs – and gain full access to everything on the Internet from video and graphics to photographs and multi-media. About 7% of community networks surveyed by the Canada West Foundation now offer only graphical-based access, while another 35% offer both text and graphical-based access. However, the move is complicated by a number of barriers:

a) *Adjustments have to be made to a Free-Net host computer in order to offer PPP access.* CSuite server software can accommodate the PPP connection, but technical alterations, costing both time and money, are still required.

b) *Graphical users will spend more time on-line, increasing the demands on a Free-Net's modems, modem lines and Internet connection.* Using a graphical interface is slower than a text-based one because more information must flow through a modem and its line to accommodate the graphical components. To see how PPP would affect their system, the *Calgary Free-Net Association* began a trial period where they allowed members to sign up for PPP. It was found that PPP users tended to be on-line an average of 12 minutes longer per session (52% longer) than text-based users (see Figure 7).

If a Free-Net is to provide PPP access without restricting access for its text-based users, more modems and lines will have to be installed to handle the increased demand. Aside from the initial capital cost of such an expansion, it would also increase operating costs. With the loss of Centrex voice grade service, most Free-Nets are already finding it difficult to afford more lines to accommodate an ever growing list of new users, much less expanding the system to suit those current users who would be staying on-line for longer periods of time.

FIGURE 7: Time On-Line at the Calgary Free-Net
(Graphical vs. Text-based Users)



SOURCE: Calgary Free-Net Association.

c) *Staff and volunteers will require training if they are to help users set up their PPP software.* PPP access requires users to run the Internet related software on their own personal computer, and support staff and volunteers will have to deal with many questions that will inevitably follow as users try to configure their computers to establish the proper network connection. With so many different computers and software packages now available, this would be a labour intensive process.

3) In the Future: The definition of basic Internet access will continue to shift in the future. In 1993, a 2400 baud modem was low-end technology, the 9600 was high-end and the 14400 had just arrived. Today, one cannot buy a 2400 baud modem, the 14400 is the low-end and the 56000 has just arrived. Graphical interface software will also continue to move ahead, forcing community networks to keep up. The main challenge is to secure the requisite hardware and maintain the necessary software to expand a system with more up-to-date technology and to accommodate a growing user base. The hope is that as Internet technology becomes more and more sophisticated, what used to be considered "high-end" equipment will be made available to Free-Nets as commercial Internet providers and their clients continually upgrade their systems.

3. Free-Nets and Charitable Status

Free-Nets trying to raise funds have run into yet a third challenge – the lack of charitable status. In fact, every Free-Net application for such status has been rejected by Revenue Canada, seriously hampering their ability to raise funds.

Without charitable status, one cannot provide donors with tax-deductible receipts – a significant motivator for many donors. This rejection has therefore slammed the doors shut to many foundations and corporations which require their charitable dollars to go only to registered charities. Many Free-Nets built their project plans with the assumption that charitable status would be forthcoming.

The *Vancouver Community Network (VCN)* decided to appeal Revenue Canada's rejection of its application for charitable status. Upon hearing the case, the Federal Court of Appeal ruled that *VCN* should be considered charitable since it is designed to contribute to the public good. The majority view of the Court recognized that people might not use the network for purely charitable purposes, but that did not detract from the network's original goal. The minority view argued that *all* of a charity's resources should be applied towards charitable activities, and the network could not hope to limit their activities to those which are legally defined as charitable.

It is unclear whether this will open the door for all Free-Nets to secure charitable status. It certainly looks more favourable, but it is not guaranteed.

AT THE COURT OF APPEAL: The Battle Over Charitable Status

The Majority Decision: Justices Hugessen and Pratte argued that Free-Nets should be granted charitable status since "information is the currency of modern life" and the "free exchange of information amongst members of society has long been recognized as a public good." The essence of their argument is that providing access to the Internet and the information available through it is a public good, much like building roads, bridges or a community hall.

The Minority Decision: A dissenting view was offered by Justice Decary, who argued that Free-Nets cannot hope to limit its activities to those which have been legally defined as charitable, and as such, they do not necessarily have a right to charitable status:

"The appellant does not undertake in its constitution to limit the provision of services to those displaying a clearly public, or charitable nature. Nor does the Court have before it any "extrinsic evidence" upon which to base a conclusion regarding the full sweep of the services which are or may become accessible on the rapidly evolving information highway. In my view, this is fatal to the appeal ... In my opinion, Free-Net is a tool whose uses, unless specifically prescribed, fall well beyond the purview of activities which are exclusively charitable in the legal sense."

The Majority Rebuttal: Justices Hugessen and Pratte countered the view of Justice Decary by saying he confused the medium with the message. In their opinion, the latter was spurious to the charitable status of the former.

"A real highway or bridge in the time of the first Elizabeth was recognized as a public good because it allowed the inhabitants of a town or village to communicate with the outside world and visa versa. It might be used by persons going to market as well as to church or school. It might also be used by highwaymen or by absconding debtors. The nature of the traffic, however, did not serve to dilute or diminish the great public good provided by the facility itself."

Revising The Charities Act: The Federal Charities Act also came under fire for its antiquated framework. Justice Hugessen suggested the need for new legislation to deal with charitable activities in the 21st century:

"The Act does not provide a useful definition of "charity" or "charitable" so that the courts of necessity are thrown back to an obscure and not always entirely consistent corner of the law of England. Judging from the number of times that this court has been called upon in recent years to apply that ancient law to the circumstances of life on the eve of the third millennium, I may be forgiven for expressing the wish that this is an area where some creative legislative intervention would not be out of order."

SOURCE: Vancouver Regional Free-Net Association v. Canada (1996) F.C.J. No

4. Competition with Commercial Internet Providers

The fourth and final challenge facing the Free-Net movement is related to the first three, but is more *perceived* than *real* – competition with commercial Internet providers and the attendant fear about the outcome of such “competition.” Much of the debate on this issue becomes irrelevant when the boundaries separating a Free-Net from a commercial provider are carefully considered. While both provide access to the Internet, Free-Nets are very different entities:

- 1) The original objective of Free-Nets was to provide free Internet access. Current conditions have prevented some from fulfilling this goal, but the goal remains. Some are even succeeding with innovations like public access terminals;
- 2) When Free-Nets do charge a fee for access, it is based on membership in a community organization or partial cost recovery, not on the basis of services rendered or profit;
- 3) Free-Nets concentrate on promoting community development by focusing more on education and information about the Internet than providing access to it. Free-Nets educate people and other non-profit groups about the information highway and actively encourage participation in this new technology;
- 4) Free-Nets provide a different quality of access than commercial entities. It is estimated that the average ratio of users to modems in the commercial sector is about 10 to 20 users per modem line, while Free-Nets have between 50 to 100 or more users for each modem line; and
- 5) A closer look at the Free-Net movement shows that it can work in concert with commercial providers and not against them. Since Free-Nets introduce many people to the Internet, they are actually developing a future market for commercial providers. As community network users become more comfortable with the technology and find it increasingly useful, many may become more willing to pay for better quality access.

To date, the fear of commercial Internet providers launching a campaign against Free-Nets has remained just that – a fear. What is important however, is how the relationship between the two *could* change if the status quo changes in the future:

- 1) Free-Nets tend to provide less sophisticated access, and advances in this area could blur the boundaries separating them from commercial providers. The relationship between the two could deteriorate as more Free-Nets provide PPP access;
- 2) With some Free-Nets starting to charge for access, Internet providers might begin to see Free-Nets as competition instead of non-profit community organizations; and
- 3) This situation could be further complicated if Free-Nets secure charitable status, allowing them to become more financially secure and able to offer better service.

Claims of unfair competition could negatively affect the issue of charitable status, future donations from corporations and the current CRTC discussions on PIAC's proposal for industry contributions to the community networks (page 10). To avoid any such deterioration in their relationship with commercial providers, it is up to Free-Nets to more actively promote themselves as agents of the public good and to show how they can work cooperatively with other providers in developing the Internet market.

RECOMMENDATIONS

Community networks comprise a very important element in the development of Canada's information highway. No other application has the capability to reach as many or as diverse a group of people in a more meaningful way, and few mediums can stake higher moral ground when it comes to revitalizing communities, fuelling employment or even strengthening the democratic process. These are strong claims, but they only scratch the surface of the potential benefits that widespread community networking offers.

It is not unreasonable to compare community networking to public libraries, community cable channels or even the telephone when it comes to the transformative power of technology and access to information. Public libraries and community television also share a common history with community networks. In each of these cases, grassroots action, rather than government or corporate investment, started the ball rolling. And in each case, it was communication and access to information defined as a common good that was the impetus for their continuing development. Just as libraries and community cable channels have matured, it is not a stretch of the imagination to see community networks maturing into stable and vital components of our 21st century infrastructure. To ensure that this happens, several steps need to be taken.

1. What Free-Nets Can Do

At the end of the day, it is Free-Nets themselves who must shoulder the responsibility for their future. A number of steps could be taken:

1) Free-Nets must first clarify for themselves and the community what role they intend to play. Free-Nets must become more cognizant of the intensely competitive nature of the Internet business and the effect that their actions will have on commercial Internet providers and the community at large. Their role as a community association run by volunteers and dedicated to the advancement of education and the promotion of community has often been overshadowed by the perception that they are merely cheap Internet providers. As long as community networks are viewed in this way, the competition issue will not be resolved to anyone's satisfaction.

2) Free-Nets must establish their niche in the Internet world and more actively press the case that they are an essential community public good. This step is necessary if community networks are to convince government and the industry that they are worthy of their support.

3) Free-Nets need to rediscover the benefits of cooperative action. By sharing resources and expertise, Free-Nets may be better positioned to overcome the hurdles they face. One step would be for Free-Nets to take an active interest in and help expand the resources of *TeleCommunities Canada*, which serves as an umbrella and catalyst for community networking on a national scale. It has been suggested that each community network contribute to this organization to develop common resources, expertise and support. This suggestion has met with little support as most Free-Nets are preoccupied with securing the resources necessary for their own survival. Assuming that charitable status becomes a reality for all Free-Nets, this idea needs to be re-visited.

4) Existing Free-Nets must lend support to new and organizing community networks. Increased communication between Free-Nets, their volunteers, employees, and boards of directors is needed to cement an emerging network of community networks. This revitalized communication network also needs to be extended to communities struggling to set up community networks. The knowledge base that exists in the Free-Net community can likely solve almost any question that a community seeking access to the Internet could come up with – be it technical, educational or political. Given that the very nature of Free-Nets is communication and community, it is unfortunate that the community of Free-Nets itself is so fragmented.

5) In the end, it all boils down to securing enough resources to achieve desired goals. The Internet world is fraught with competition and everyone is trying to get their share of the pie. What this means is that Free-Nets have to compete with consultants, bureaucrats and industry to be heard by policy makers. They have to compete with other non-profit organizations for donations. There is even friendly competition between community networks themselves as to who has the most users, the best system and the coolest logo. Individually, many Free-Nets have come up with action plans to compete in a variety of different arenas. With increased cooperation and communication, Free-Nets should be able to provide even better service to the community.

2. What Industry Can Do

Industry can play a significant role in developing community networks. In fact, the private sector could have as much impact, maybe even more, than the public sector:

1) Lack of charitable status has prevented many companies from making financial donations to community networks, but there are other ways to help. Through partnerships, price discounts on various hardware purchases, donations of unused computer equipment and other services, industry has already played a vital role in helping start, maintain and even expand community networks. This has been particularly true for those Free-Nets looking to provide free access through public access terminals. In addition, industry should begin considering now what potential role they could play if charitable status is granted to community networks in the future.

2) Industry needs to consider how it can benefit from community networking. Free-Nets can help firms by training employees for the Internet and improving the bottom line. With less than a quarter of Canadians having ever used the Internet (see Figure 4 on page 5) business will have to do a great deal of training in order to exploit this resource to its fullest. By supporting community networking, some of this training can be done outside of company time and at little cost to industry.

3) Internet service providers need to realize the key role Free-Nets play in developing market potential. With some 75% of the Internet market yet to be tapped, commercial providers would do well to help Free-Nets wherever possible. Community networks introduce many people to this market at little to no cost, and by educating people about the Internet and its uses, many will eventually advance to the point where the services of a commercial Internet provider are needed. Since Internet providers are the most likely source for the surplus equipment required by Free-Nets, donations of computers, modems and other hardware would go a long way in ensuring a Free-Net's survival or expansion.

3. What Government Can Do

1) Free-Nets have been playing the Internet game for years, and governments should realize they are a valuable source of input into public policy. By inviting the Free-Net community to the policy table, governments could access a wealth of experience and hear the views of those most directly affected. One example where consultation would have proved beneficial is with regards to the *Community Access Program (CAP)*. This program was designed to assist rural communities with populations under 50,000 and higher than average unemployment to access the Internet. If the Free-Net community had been invited to participate before CAP was launched, deadlines might have been more easily met and implementation of the program smoothed.

2) The federal government needs to recognize the role community networks play in developing the Canadian information highway to the benefit of all Canadians. Official recognition of the role of Free-Nets in discussion papers and commission reports would boost the profile of community networking, but governments could also agree to support funding or implement policies favourable to community networks and thereby encourage Canadians to learn about and take advantage of emerging 21st century information technology. One such example is including Free-Nets in the *Computers for Schools Program*, thereby allowing them to gain access to thousands of old computers donated by industry. Government could also re-think the *Community Access Program*, making funds available to all communities instead of just those that adhere to certain restrictive criteria.

3) Government is in a unique position to sponsor groundbreaking research and development related to the information highway. By using federally funded programs and entities such as CANARIE, SSHRC, the NSRC or even corporate tax credits, governments can improve community networking and uncover the best options for building the information highway to the benefit of the greatest number of Canadians. *TeleCommunities Canada* could be targeted for specific funding for certain tasks such as facilitating CAP applications and monitoring communities receiving CAP grants.

4) *Revenue Canada needs to consider granting charitable status to Free-Nets.* Government does not need to spend hard cash to provide assistance to the community networking movement. By providing charitable status, government would help clear the way for community networks to raise more funds and secure equipment to enhance public access to the Internet.

5) *Government can also help in other ways.* They can help convince telephone companies that community networks are a major customer and need more favourable line rates to help more Canadians with this technology. Governments could also change regulations to allow for donated time on telephone lines and could itself donate excess bandwidth on government and industrial leased lines.

4. The General Public

The public at large will make or break a community network. People must realize that their network is a community organization and not simply a cheap Internet provider. This is no small matter. If Free-Nets are merely considered a cheap way to get on the Internet, users will not become involved as volunteers.

However, this is a two way street. Community networks must open their doors to volunteers and organizations within their community to ensure that the project is truly owned and operated by and for the local community. A possessive attitude will only serve to isolate a community network. Rather, Free-Nets need to focus on building an ever-expanding group of dedicated stakeholders in the organization to better ensure that its future is a successful one.

CONCLUSION

Central to the Free-Net movement is the concept of a *public lane* on the information highway, where everybody can travel regardless of economic status or access to the requisite technology. This public lane is already under construction by community networks across Canada, but for construction to continue, the builders need help overcoming the challenges that have placed the movement at a crossroad. While these challenges are significant, they are by no means insurmountable.

Free-Nets must actively carve their niche on the information highway and show governments, business and the general public that they play a critical role in its ongoing development. In fact, no other type of organization has the ability to develop the information highway in such a way that all Canadians can take advantage of what it has to offer.

Like public libraries, community networking operates under the assumption that access to information is a common good. In addition, community networks have the potential to mature into a stable and vital component of Canada's 21st century infrastructure. With this in mind, there will hopefully be a re-alignment of the current landscape. Once community networks receive recognition for their contribution, they will find an increasing base of support. With this support, dramatic inroads can be made in providing Canadians with education about the Internet and ensuring that universal and affordable access remains a primary feature of Canada's information highway.

This report was authored by Shawn Henry, Research Associate with the Canada West Foundation, along with Andrew Avis, a freelance writer, and CWF Research Assistant Casey Vander Ploeg. Some of the background information for this report was taken from a survey of Canadian Free-Nets conducted by CWF Research Associate Monica Gattinger. For more details on this survey, refer to "Canadian Free-Nets: A Roadside Report on the Information Highway" also available from Canada West Foundation.

Because of the independence given the authors in undertaking this report, the opinions and recommendations contained within are those of the authors only and do not necessarily reflect the opinions of Canada West Foundation's Council, its members or contributors, nor anyone associated with the University of Calgary or the Calgary Public Library. Permission is granted by the publisher for any and all reproduction of this report in its entirety for non-profit and educational purposes.