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Guide for Creating a Smart Community
Smart Communities Program – 2002

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GUIDE *for Creating a* **Smart Community**

This Guide sets out practical approaches to building a "smart community". Users of this Guide are encouraged to adapt the suggested approaches to meet their own circumstances. Although the steps are shown as sequential, users may wish to combine some of them.

ABOUT THE GUIDE

The dynamics of economic growth have changed over the past few years. The synergies between computers, electronic networks and other information and communications technologies have started to bring about dramatic changes in the way goods and services are produced and delivered to final users. The new possibilities brought about by this technological transition have resulted in a demand for innovative products and services. In turn, this has triggered a flood of new start-up companies, a wave of acquisitions, mergers, and strategic alliances, as well as a change in the strategies of existing companies to develop network-based products, services and applications.

The technological shift under way also has important implications for the growth of Canada's communities. Communities, as well as companies, have to compete in the global economy. The main challenge for community leaders is to avoid losing control of the economic destiny of their respective communities. Traditional ways of doing things are no longer adequate. For growth and jobs to take place and be sustainable over time, communities need, among other things:

- skilled and adaptable human resources
- a high quality of life
- advanced infrastructure.

These are fundamental economic and social foundations of a community. Communities across Canada have started to shift their strategies in order to build and strengthen these foundations, by exploiting applications of electronic networks and the Internet.

This Guide sets out practical approaches to building what has become known as a "smart community". Each community has unique characteristics and there is no one "right" way to design a smart community strategy. Therefore, the users of this Guide are encouraged to adapt the suggested approaches to meet their own circumstances. Although the steps are shown as sequential, users may wish to combine some of them.

Experience through learning by doing is being accumulated by communities across Canada. As best practices emerge, the Guide will be updated from time to time to reflect them.

WHAT IS A SMART COMMUNITY?

Smart communities are where leaders and stakeholders have formed alliances and partnerships to develop innovative ways to extract new economic and social value from electronic networks and the public Internet. Typically, the focus of smart community strategies is to change the dynamics of growth in the community, so as to make it an attractive and competitive location in which to live, invest, and carry on business. This is accomplished by using information and communications technologies as tools to build the community, solve its problems, and transform the way individuals and organizations live, work, learn, shop, and manage their affairs.

Building a smart community does not usually consist of one or two projects. Rather, the outcome of a smart community strategy and action plan is one or more sets of related projects that are linked through:

- an overall goal and vision for the community;
- a common economic and social objectives that are specific to the community's needs and opportunities: and
- a strategy for realizing those objectives.

By way of example, smart community projects may be designed to provide new and improved network-based services and applications for:

- the administration of municipal government and delivery of services to the public (e.g. social services)
- business and economic development

- tourism development
- access to information, e.g. community activities and programs
- learning, training and education
- preservation of cultural heritage.
- development of the arts
- eliminating unequal access by citizens to the Internet.

A smart community can be comprised of a city or a group of geographically adjacent communities that are facing similar challenges. Communities that are geographically separated can also collaborate to form a smart community, particularly when they share a common culture.

GETTING STARTED

A successful smart community cannot be built through a piecemeal effort. There are a number of steps in the process that are common to all smart communities:

- bring the key players together - form a coalition of key community leaders and potential users
- determine community and user needs and opportunities that would benefit from information and communications technologies
- develop a vision and mission
- define smart services and applications
- assess the adequacy of the existing technology infrastructure required to deliver the services and applications and identify the gaps
- develop a business strategy and implementation plan for the smart community initiatives, that includes partnerships, financial and human resources, and implementation management.

The sections that follow elaborate on the process to carry out each one of the steps. Although these steps follow a logical sequence, the overall process of arriving at a business plan for your smart community may be an iterative one.

Bringing The Players Together

Every smart community or city is unique. In some communities, it is the business leaders that are the catalyst for action. In others, it is the local government or the economic development authority. Smart community plans can also develop as a grassroots effort, through the actions of citizen groups or local institutions. Whether the process is top down, bottom up, or a combination of both, a characteristic of all successful smart communities is that they are the result of collaboration between business, government, education, and individual citizens. The driver is usually a sense of concern about the ability of the community to compete in the global knowledge-based economy. Leaders from each stakeholder group are in the best position to know how technology could be applied in the community to meet economic and social needs.

Role of Key Individuals

The outcome of the collaboration between stakeholders will be a partnership to implement the smart community strategy and business plan. The partners will:

- share authority
- have joint investment of resources
- obtain mutual benefits
- share risk, responsibility, and accountability.

The partnership will be firmed up once the smart community strategy and business plan have been developed. The first step is to form a *coalition* of individuals who are enthusiastic about the potential of technology to help their community and are prepared to explore their mutual interests. The catalyst for forming a coalition is usually a *key individual (or individuals)*, who takes the initial steps to deploy technology for community benefit.

The key individuals will usually make a list of others who might be interested and who may wish to work together to respond to specific challenges and opportunities.

The common factor in identifying such individuals is that there is likely to be a shared interest around an opportunity, challenge, or issue.

Forming a Coalition

There are a variety of approaches that can be used to form a coalition:

- contacting key people by telephone to determine if there is interest
- meeting potential partners for coffee or lunch and having informal conversations
- taking the opportunity to follow up on ideas or issues raised during the course of other activities
- bringing together a brainstorming, focus, or discussion group.

The following criteria could be used to help identify target individuals:

- Individuals should hold positions of leadership in the community sectors that may be critical for the success of the smart community initiative. Typically, they will come from sectors and institutions such as education, training, social services, municipal government, economic development agencies, business, voluntary agencies, health, tourism, and the public at large. As a group, they should reflect the needs and opportunities of the community.
- Include individuals whose organizations may be end users of the smart community services and applications, or who could be directly affected.
- The individuals approached should be problem-solvers and known for making a contribution and getting things done. Such people will tend to be active supporters of the coalition.
- It would be helpful if the individuals are decision-makers, or influence decision-making, within the organizations in which they operate.
- Having a variety of different values and ways of approaching things makes for a more dynamic coalition.
- If feasible, some of the individuals recruited should have experience with and, if possible, expertise in hardware and software electronic networking technologies. There should also be legal expertise in the group.
- The group should not be too large, as this will make it difficult to get things done. Having between 10 and 15 people has be shown to work well.

The group could decide to designate itself as a Steering Committee. Its mandate would be to act as a catalyst to develop a vision, strategy, and action plan to exploit the full potential of the information highway for economic growth and/or social development in the community or region.

Developing a Vision

It is important that the Steering Committee develop a well-defined shared vision. A vision is a picture of the ideal future. It is formed by considering the nature of the challenges the community is facing and the potential impacts of a smart community strategy and implementation plan.

Creating a vision is an appropriate way to start the development of the coalition-building process. It defines where the Steering Committee wants to go. It should be captured in a short statement.

People who come together based on common interests or concerns are prone to simply discuss the problems and issues. By describing what the future should look like as a result of the activities of the coalition, the participants are able to see the need for the initiatives that will be required to get there. For example, "Our community is a leader in taking full advantage of electronic networks to build and maintain a competitive local economy and a high quality of life."

Establishing Guiding Policy Principles

At this point in the process, it would be helpful in moving the Steering Committee's work forward if a set of policy principles are defined. Principles form the framework for deciding what the Steering Committee will focus on and potentially support and not support. The following principles are by way of example. Each community should define the principles that are appropriate to what the community leaders want to achieve.

- The smart community initiatives must be sustainable beyond the initial installation and trials.
- All initiatives must be in the best interests of the community.
- Private sector partners must make a profit.
- Revenues should be generated and kept in the local community.

DETERMINING COMMUNITY NEEDS AND OPPORTUNITIES

A Preliminary Assessment of Needs and Opportunities

The objective is to carry out an assessment of community needs and opportunities, in order to identify innovative network-based services and applications that would create new value for the community.

Services would include such things as:

- the provision of distance learning courses; and
- access by citizens to information on the Internet about the community's forthcoming meetings of the Mayor's Council, the opportunity to provide views on issues, and the decisions taken by the Council.

Applications come about because software or other tools are provided to users so that they can develop their own value-added uses of the network infrastructure. For example, the infrastructure could be provided that enables businesses in the community to develop their own web sites, or jointly market their products. Innovative applications can sometimes lead to new services.

Care should be taken not to focus too much on technology at this stage. While technological change is creating new possibilities for network applications, it is the community's needs and opportunities that should be the main drivers of the assessment process. The assessment of the existing technology infrastructure and determination of future requirements will take place following the needs and opportunities assessment.

The needs and opportunities in the community as a whole should be considered, rather than focusing on one or two areas. This approach is more likely to capture the areas where the impacts would be greatest. As well, it is more likely to result in community-wide transformation.

The Steering Committee should, using the knowledge base of its participants and drawing upon published reports and statistics:

- develop a set of goals that explain what the Steering Committee is trying to achieve (i.e. the strategic directions for the community) (e.g. help to achieve a skilled and adaptable workforce able to function in a knowledge-based society and economy; strengthen the capability of small businesses to apply electronic business for competitive advantage)
- prepare a broad overview of the current electronic network-based services and applications that are community-based, in all of the key sectors and areas;
- determine the nature and extent of use of the Internet by the public and businesses;

- identify, in a preliminary way, the most important needs and opportunities in the community that could be met through electronic networks and other information technologies; and
- agree upon which needs and opportunities appear to be priorities, could have an important impact in realizing the goals of the community, and should therefore be the subject of a more in-depth examination.

Organization of Round Table Consultations

The next step is to engage stakeholders in the community to examine the priority needs and opportunities in greater depth. This can be accomplished with a minimum of time and cost by organizing a series of one-day informal round table meetings – one for each of the priority needs and applications identified by the Steering Committee. There should not be more than about seven such meetings. In preparation for the round tables, the Steering Committee will prepare a short background paper on the results of its deliberations. The paper would be sent to the round table participants in advance. An appropriate member of the Steering Committee could chair each round table. Another approach would be to invite a roundtable participant to be a co-chairperson of the meeting.

The round tables are a bottom-up process. Each round table meeting would:

- determine to what extent the community or region could expect to solve its most pressing problems if it were to become a "smart community" or "smart region",
- identify the community's strengths and weaknesses
- propose how the community should be positioned in three years from now
- determine what actions would have to be taken to attain those objectives
- recommend high priority projects that should be undertaken (services, applications, technology)
- identify the key players and the specific ways in which the key organizations in the community or region could work together
- determine the resources (financial and human) that would be required
- define the anticipated benefits and impacts.

The round table participants should be in a decision-making or decision-influencing position within their respective organizations, and selected to obtain a balance between:

- knowledge of what is going on in the community
- knowledge of user needs and opportunities
- knowledge of today's technologies and trends
- knowledge of networks, content and applications in the field.

It would be advisable to include officials from municipal government. Consideration should be given to inviting a provincial government representative as well.

Developing An Action Plan

Someone should be designated as the Secretary for all of the round table meetings. This will likely be the person or persons who are the Secretariat to the Steering Committee. The Secretary's notes of each meeting will a basis for the preparation of a draft action plan by the Steering Committee that consists of:

- an Annex that has a report on each round table meeting;
- a front section that includes:
- the challenges facing the community
- a proposed overall vision statement for the community
- principles for guiding the community's response to the challenges
- the highest priority needs and opportunities of the community
- a set of proposed themes under which projects would be grouped
- a set of proposed projects that should be the highest priorities
- the expected outcomes of each project.

Projects consist of the set of actions that are needed to:

- put the network infrastructure, information technologies, and software in place to enable services and applications;
- pilot test the applications and services; and
- provide ongoing technical and other support required to maintain the services and applications over time.

This draft action plan is the basis for one-on-one consultations with potential partners to develop, in greater detail:

- plans for each project, including objectives, a critical path, milestones, and deliverables
- a budget for each project, including proposed sources and uses of funds;
- the lead organization(s) for each project, as well as the potential partners (suppliers and users) who will provide funding, in-kind resources, or participate in some other important way; and
- the respective roles and responsibilities of the private and public sectors.

At this stage, the Steering Committee continues to act as a catalyst. It will not necessarily be responsible for implementing the projects. Rather, each project would be implemented by a designated lead organization, together with its partners. The community will require a management office and staff to guide the overall implementation. This is a subject to be dealt with in the business plan (see below).

The Personality of Your Smart Community

Every smart community has a different personality. That personality is largely determined by the nature of the goals of the community has set for itself in the action plan. Many smart communities have come to appreciate that economic and social goals are closely related. A solid economic foundation for growth and jobs rests upon having a strong social fabric in the community. Usually, smart communities adopt a balance of both types of goals. However, it is entirely appropriate for a community to decide to tackle social challenges as its highest priority.

Smart communities should choose a name for their initiative that reflects the personality they wish to project and communicate. The following examples convey a sense of direction:

Ontario – SmartCapital: http://www.smartcapital.ca

Newfoundland and Labrador - Smart Labrador: http://www.smartlabrador.ca

Prince Edward Island - Virtual Charlottetown: http://www.virtualcharlottetown.com
http://www.townsquare.ca

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New Brunswick - La Péninsule Acadienne: http://www.cipanb.ca

COMMUNITY ENGAGEMENT

Engaging community leaders and stakeholders

A key step in launching a Smart Community initiative is to mobilize community resources and organize participants. This can be done by creating a Steering Committee with representation from all leading institutions and stakeholders in a community. The Steering Committee should meet on a regular basis to guide the establishment and operations of a Community Based Network (CBN) organization. It should address issues such as technical support, financing, business planning, and development in connection with the CBN. A Steering Committee is one of the easiest organizational structures to implement since it requires no formal legal or financial commitment. It is, therefore, a quick and easy way of getting a project started. As the project expands, more formal legal arrangements can be added later. Outlined below are some of the steps that should be taken in setting up such a Steering Committee.

Establishing the CBN Steering Committee

Steps to Establish A Steering Committee	Skills and Attributes	Community Action
1. Identify key members for the Steering Committee and define their roles.	▪ familiarity with the CBN concept would be an asset ▪ should have a defined role on the committee and agree to the responsibilities of that role ▪ one or more committee members should have technical expertise ▪ one member should be able to provide financial	

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	and business planning expertise	
	▪ one or more members should have experience with marketing and promotional work	
	▪ members may include business partners who can help develop new revenue streams	
	▪ clearly define roles and set realistic time expectations – this is important in preventing volunteer exhaustion	
2. Evaluate the nature, the strengths and the needs of the community (as defined by the target clientele).	• What is the level of computing and Internet awareness in the community? • What in the level of computing and Internet skills in the community? • Which citizens of the community are already comfortable with using similar technology? • What resources can the community provide to the CBN? • Which groups should be targeted by the project?	
3. Develop a proposal for ways of enhancing and developing the CBN once it has been established.		
4. Steering committee responsibilities generally fall under the following categories:	• Technical • Human resources • Finances, administration and business planning	

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	• Program development and delivery	
	• Information management, public and media relations	
	• Promotion and marketing	
5. If government funding is sought, it will have to be received by a legally constituted authority. In addition, the focus of work will shift from planning and launch to implementation and development.	• membership in the committee may rotate to best suit the changing needs of the community • focus of the committee will change from strategic planning and promotion to implementation and operation • user participation levels must be examined • regular meetings of the committee members should be maintained • options for further development should be considered	

Once a project is launched, it may be necessary to transform the original Steering Committee into a legally constituted organization. This may be the case, for example, if the group is to administer funds. It will also be the case if the group acquires and manages assets such as equipment, furniture etc. And it will be the case if the CBN is to enter into legally binding agreements with other institutions.

One model is to transform the Steering Committee into a not-for-profit corporation in which ownership is shared by all participating community organizations. There are, however, costs associated with establishing legal identity as a not-for-profit organization. In some cases, a project partner that already has not-for-profit status may be prepared

to assume responsibility for the financial administration of access centre funding. If so, then those legal costs can be avoided.

Other possibilities should also be considered. For example, the community may be in a position to partner directly with an organization or company willing to operate the CBN. In this case, it may be possible to create a legal corporate structure in which the community actually contributes to and owns a share in the CBN. In such cases, the Community would receive back its share of any income from the CBN and this could be directed into further local developments and improvements to network infrastructure or applications.

Recruiting the Best People

To make a CBN work well, it is necessary to involve people with interest, enthusiasm and commitment; especially people with a track record of community service. Perhaps the most important qualities to look for are reliability and initiative. These qualities are critical in any volunteer-driven initiative since there are no real administrative levers available to force action. Progress can only be made if people are willing to take the initiative and if they are willing to stand by their commitments.

Technical expertise in the field of telecommunications is useful, but it is not a prerequisite for participation. It is more important to understand how the community might benefit from the technology than to know how the technology works. The same approach should be used at all public events: focus on how the technology might benefit the community but never on technical specifications.

Finally, it is important to pay attention to keeping people enthusiastically involved. A community-based initiative has few ways of rewarding people, but treating them with civility and respect can go a long way toward motivating them. That means paying attention to their opinions, involving them in discussions, giving them some authority, allowing them to make decisions, and trusting them to make a positive contribution. It is astonishing how much people will contribute if they are brought into the process in the right way.

Recruiting Change Agents and Decision Makers

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While it is generally good to have help from many volunteers, they must be organized to avoid chaos. A first step is to define the skills that are needed and see who has those skills. Specific tasks should be assigned around identified areas of competence.

Skills Needed	Details	Possible Candidates
Administrative support	Preparation of minutes or meetings, correspondence with partners.	
Financial management	Cash-flow planning, preparation of invoices, banking	
Fund raising	Organization of public events and private solicitations to raise cash.	
Mail-outs	Organization of envelope stuffing, mail-outs	
Media relations	Communications planning, developing messages, talking to media, getting them to attend events and report on the initiative	
Promotion and advertising	Layout or promotional materials, messaging, graphics and design, placement in appropriate media.	
Events management	Logistics (venue, refreshments, audio-visual support), coordination or promotion, invitations, follow-up.	
Research	Surveys, gathering of technical information, monitoring what other communities are doing.	
Writing	Proposals, discussion pieces, promotional materials, statements and position papers, reports,	
Technical support	Network design, applications design and implementation.	

Leadership

Any community will have natural leaders. The key is to find them and get them involved. One place to look is among the leaders of existing organizations and institutions. Such partners may even be persuaded to contribute the time of key staff from their own organization to work in the CBN. This has the dual benefit of contributing a resource, usually a reasonably senior person, and keeping the partner organization involved and informed through this representative.

Some communities may lack natural leaders. Individuals interested in this type of initiative may lack the authority or the charisma to lead it. In such cases, one alternative is to act through a committee of equals, though some provision needs to be made for breaking an impasse or responding to emergencies. Another strategy is to vest the project in one existing organization that exercises leadership. Clearly this is a less desirable alternative since there is a danger that the initiative will be identified with only that one lead organization and will not be perceived as a joint enterprise reflecting the interests of the entire community.

Recruiting Leaders

Search prominent institutions in the community, especially those that are or may become large users of advanced telecommunications capabilities. At first, consider involving promising leaders on a volunteer basis. Later, explore the possibilities of formal secondments from their current employers as a way in which the employer can make a material contribution to the initiative.

Institutions in the Community	Names of Leadership Candidates	Possible Roles

Educational Institutions:
    Schools: principals, vice-principals
Boards of Education: trustees, administrators
    Universities or Colleges: professors or administrators
Training Institutions		

Medical Establishment - executives in:
        Hospitals
        Clinics
        Nursing Homes
        Chronic Care, Outpatient Services
        Retirement Homes		

Government
        Municipal Officials
        Community Futures Development Corp.
Business Centres
Economic Development Office		

Business
        Largest local enterprises
        Prominent legal firms
        Accounting firms
Banks or financial institutions		

Associations
        Business Groups
        Service Clubs
Charitable Groups
Volunteer Organizations		

Local newspapers or other media		
Other Institutions: Libraries Community Centres		

Social Services		
Retired community Former business or political leaders		

Developing a Vision

Every project needs a vision to focus participants on its direction. In the case of ICT development, the vision has to be understood by the whole community. At the same time, those implementing the vision must know how to describe it to anyone in a few sentences is called upon to explain and defend the project. Visions can easily become abstract or vague, however. The best vision statements are personal, specific and relevant. They should go beyond describing a potential destination to include a road map that tells people how to get there.

In any successful CBN, the primary short-term focus is likely to be oriented toward satisfying the community's assessed needs. Analysis of this information will enable the Steering Committee to refine the organization's focus. The initiative's secondary (longer-term) focus is to serve as a catalyst for further development. This is done by using the awareness and training that it generates as the foundation for planning further projects in the community.

The following questions have been designed to draw out key community concerns. The examples are intended to get you thinking about your circumstances. These issues have to be tested with a broad cross-section of the community and then priorities established.

Issues	Examples	Your Community
What needs have to be addressed?	Lack of broadband telecommunications services impairs the ability of companies and institutions to function productively and competitively.	
What are the proposed solutions?	Aggregate demand for telecommunications services and network applications to increase leverage with telecommunications service	

	providers.	
What does this mean for ordinary people in the community?	Access to affordable network applications	
What does it means to institutions in the community?	Connection to the external environment. Access to applications that improve productivity.	
What has to be done?	Connectivity needs to be upgraded to deliver broadband services. Relevant applications have to be identified. Levels of service, priorities and timing have to be established. The whole strategy must be described in an implementation plan.	
How can people participate?	Need volunteers to participate on steering committee. People also needed for promotion, logistics, administrative support etc.	
What does implementation of the vision depend on?	Participation from key people in the community. Approval and support of the community as a whole. Ability to secure financial resources and external partners. Ability to manage large-scale projects.	
How many of these elements are present already?	[See section on preparing a community audit.]	
What elements can be developed and added?	Community-based, not-for-profit organization, reflecting a broad cross-section of needs and interests, to manage the project.	
Are there critical elements of the	There is no agreement among key local	

vision that cannot be developed?	institutions such as the municipal governments to cooperate. There is no health-care component to the vision because there is no hospital in the community.	
If so, how can the community work around their absence?	Develop a flexible architecture and applications that will accommodate a municipal network overlay when cooperation becomes possible. In the absence of a local hospital focus on a remote diagnostic capability for local doctors' offices or clinics.	

Developing a Consensus

Effective community-based action depends on consensus. Consensus should address community needs, solutions and processes. A strong community consensus, articulated in a mission statement can guide action and reduce the potential for conflict. A clear and succinct mission statement will also help to explain to others what the initiative is all about in a convincing manner.

In developing a mission statement, the group needs something that is easy to understand and that it could defend publicly. In order to achieve this, the community can use various strategic planning models. A component of the process of developing such a plan is securing public consensus through a major public event. The purpose of this event can be to raise profile and galvanize public support for the CBN and its role in further development.

In effect, this gathering can bring together a broad cross-section of experts, decision-makers, opinion leaders and volunteers. It ratifies the approach taken by the Steering Committee and lays the basis for its transformation from an ad hoc committee into a permanent, not-for-profit organization with a clearly defined mandate and role in the community. Without this public ratification, the working group will remain a collection of well-intentioned volunteers instead of the leading player in the process of telecommunications development.

The following questions help identify the key beliefs and strategies around which a community can build a consensus. Examples are intended to illustrate the kinds of issues, beliefs, and strategies that may be relevant in a community seeking to take better advantage of advanced information technology.

Elements	Definition	Examples	Your Community
Critical Issues	What issues, if not addressed now, will cause difficulties for the community in the future?	Local industry threatened by closure Inward investment drying up Cutbacks to local government and its services Contracting traditional economic base Brain drain: young leave other opportunities	
Beliefs	What beliefs about their current situation and their future do most of the members of the community share?	The Community Partners believe that: • advanced telecommunications will enhance our competitive advantage; • advanced telecommunications is essential for community and economic development; • rural communities must have access to telecommunications infrastructure comparable to those available in urban centres; • equitable access to services associated with telecommunications will enhance our opportunity for skill development; and	

		• education and training are critical components in an advanced telecommunications environment.	
Strategies	What strategies can/should the community adopt to address its critical issues?	To develop the community's telecommunications infrastructure: • We will work with users and service providers to develop a business plan for shared networks; • We will establish a legal framework and sustainable corporate entity; • We will develop a flexible shared telecommunications infrastructure; • We will identify, inform and attract potential users of advanced telecommunications; and • We will act as a persuasive model for integrated community network development.	
Actions	What actions can the community take to implement its strategies?	This can be laid out for each strategy as a matrix that includes: • a set of objectives • tasks/activities • responsibilities • timelines and • projected costs.	

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Evaluating Assets and Identifying Needs

A precondition for any successful large-scale community-based project is to identify the community's needs and the assets that it can deploy to address those needs. Needs can be framed in terms of critical issues: What challenges does the community face that it must address? What challenges, if ignored, will cause serious problems for the community? In many cases, the impetus to improve telecommunications infrastructure is driven by a recognition of economic threats in the absence of developed ICT capabilities.

The community should also evaluate its capabilities and resources. Through its contacts and surveys, the Steering Committee can perform an "audit" of the community's assets and its needs. It can note which organizations have a keen interest in telecommunications and networking issues and identify individuals within those organizations that can be called upon to help.

Methods used involve not only formal surveys but also informational meetings. Typically these sessions can be held to provide information and context to the members of the hosting organization, but they inevitably also ask those present what they think and want. Perhaps more important, those present can be asked for ideas about how to improve things in the community and can be challenged to specify how they might participate. Any time anyone offers to do something, that person's name and contact information should be recorded. Members of the Steering Committee should make sure to follow-up with a call that brings the would-be volunteer into the process. The following table offers some basic questions to be asked during a community audit.

Conducting the Community Audit			
Key Questions	Type of Organization	Your Community	Possible Role
What organizations exist in your community?	Business Associations Service Clubs Large Private Corporations Municipal Offices		

	Provincial Offices Federal Offices Educational Institutions Libraries Research Centres Economic Development Offices Hospitals and Health Services Social Services Foundations Public Utilities Other		
What means of communication are available in your community?	Local Press Local TV/Radio Association Newsletters Internal Corporate Media (e.g. bulletins) Government Bulletins and Newsletters MPs' Householders Promotional Brochures Press Releases Other Mail-outs to Households Internet		
What regular meetings in your community can be used as platforms to communicate progress?	Sessions of municipal government General meetings of associations, chambers of		

	commerce and service clubs Corporate meetings Conferences Fairs and exhibitions Regular community events Special community events Other		
What concrete assistance will your initiative require from partners?	Provide a venue for presentation Space in a communications vehicle Writing and editorial help Printing/production Distribution Financing production costs Sponsorship of events Free advertising		
What key individuals in your community do you need to enlist as supporters of your initiative?	Political Leaders Organization Heads Operational Managers Public Relations Financial Officer Support Staff Other		
What kinds of events can your community organize?	Information Sessions Conferences Shows and Exhibits		

	Workshops Lunches/Dinners Awards ceremonies Other		

Analysis of Needs

Once community strengths are understood, the next step is to define its needs. Techniques for doing this might include public meetings, workshops, surveys, and personal interviews. The following questions are intended to guide community organizers in conducting a survey of their own communities. The questions posed are intended as suggestions to get the process started. Several different individuals may have to get engaged in gathering this base-line information. It is suggested that such information is needed at the outset in order to make the case for action to the rest of the community.

Need	Questions	Situation in Your Community	Impact of Information Technology
The demographic base	What is the population of your community? Is it growing, static or shrinking? How does the number of people leaving the community compare with the number entering it? What percentage of the population are young (under 18), working age (18 – 65) and retired (65+)? How have these proportions changed over the past two decades? What are current educational levels in your community? How many people		

	have completed post-graduate work, graduate work, high school and elementary school? How have these proportions changed over the past two decades?		
The local economy	What is the nature of the local economic base? (agriculture, manufacturing, services, etc.?) What are the most important sources of jobs in your community?		
	What are the largest private companies in the community? What are their immediate challenges and needs/		
	Are some industries in decline? Are there closures, lay-offs and job losses? If so, why is this happening?		
	Are industries entering the community? Why have they come? What can you do to encourage others to come?		
	Is there a danger of some existing industries leaving it? If so, what do they need that your community lacks?		
	Do local businesses have all the skills they need? Are there skills that are difficult or impossible to get? What are		

	they?		
Social needs	What educational opportunities are available to people in your community (primary, high school, vocational schools, colleges, and universities)? Can people get the education they need in the community or do they have to leave? Where are the nearest educational centres and what do they offer? What health care is available to people in your community (doctors, clinics, hospitals, nursing homes, specialized care)? Can people satisfy their health care needs in the community? Is there are need to go outside the community for certain kinds of health care? What are these?		
Institutional needs	What are the largest institutions in the community (local and municipal government, educational institutions, health-care institutions, libraries, economic development offices, other?): Are they affected by any of the following:		

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	- cutbacks - contracting tax base - amalgamation/rationalization - skill shortages - rising expectations (demand for more service, improved service, new services)?		

Promotion and Marketing

A Community Based Network will be successful if it is able to raise public ICT awareness. There may be skilled Internet and ICT users in the community, but some of the population will have had no or minimal exposure to ICT or the Internet. The goal of the CBN is to engage those segments of the community.

It is important that each Smart Community initiative promote itself and its achievements to the entire community as a way of securing support and participation. This can be done through a public event involving participation by representatives of local organizations, municipal officials, etc.. Other marketing and promotional initiatives which could include radio announcements, posters, an article or interview in the local newspaper, flyers, where relevant an interview on television and announcements in the schools and other organizations. Referrals from other community organizations and partner organizations are an effective way to encourage people to participate because those organizations already have an established network and reputation.

Effective communications is essential to the success of any community-based initiative. Ultimately any such initiative is an exercise in communications. The crafting of suitably compelling messages, tailoring them to specific audiences, and delivering them in an appropriate venue precedes effective action. In addition to public information sessions, there are a number of other promotional methods that can be used to encourage the public participation. In terms of traditional media, they include: newspaper, local radio, listings in newsletters of partner organizations and posters

Word of mouth referrals can be very effective for promoting a community initiative. It also costs very little, if anything. However, if the promotional strategy is going to rely on referrals, the CBN will need to partner with organizations that are known and trusted by the community. Otherwise, it will be difficult to convince individuals that they should try something new. An organization that has a good reputation with a positive track record in the community is a critical element to building trust and credibility. Furthermore, if the organization has existing relationships with clients that the CBN is also targeting, then it is a good candidate for referring individuals to the CBN. In many cases ICT and the Internet can raise fear among people rather than interest. It is therefore important to have a trusted organization refer clients.

Developing a Communications Strategy

Contact List: An important tool of communication is a contact list that identifies who needs to be reached and for what purpose. Obviously such a list continues to evolve through the course of the project, serving as a reference point for further activity. A record should be kept of everyone who expresses interest, participates in a meeting, attends a training session etc. In addition, participants can be encouraged to contribute names of people they know who might be interest to add to the contact list. This will make it relatively easy to organize mail-outs, invite people to events, or solicit support.

Promotional Campaign: Communications professionals familiar with both the media and cultural receptivity of the target audiences should develop the specifics of the promotional campaign. The promotional campaign should centre on the following messages:
- The importance of technology in today's economy
- Technology is a tool that requires skill to use well
- Economic and social significance of providing universal access to technology for all citizens
- Similar initiatives have already been started in other communities.
- Systematic process of introducing and exploiting technology
- Models that validate this approach and illustrate its potential impact
- Create awareness of and demand for information technology in order to generalize its use throughout the community
- Improved productivity, new sources of wealth and employment, enhanced international competitiveness, and a better standard of living/quality of life for all citizens.

Materials: The following materials could be used in the promotional campaign:
- Slides shows (Power Point presentations)
- Speaking notes and speeches
- Brochures
- Notes on how to organize effective public meetings
- Notes on how to make public presentations and how to demonstrate the technology
- Sample articles to be used in the press

Media: The promotional campaign can use the media (television, press and radio) to explain the program's objectives and introduce the Smart Community concept. Wherever possible, program spokespeople will be interviewed in order to convey the message directly. It may also be possible to secure donations of advertising time and space from media organizations willing to support the objectives of the initiative.

Staff should be encouraged to organize public information sessions for leaders of target communities. The sessions would introduce the concept, explain potential benefits to the community, indicate what has to be done to organize at the community level, and encourage community leaders to commit to participation.

Community leaders will be encouraged to organize two types of promotion. The first will target all significant institutions in the community, encouraging them to participate in the initiative, join a local community organization to manage it, and contribute resources (people, time, money, facilities etc.) to the effort. Once this is done successfully, a second type of promotional campaign will be launched to inform ordinary citizens in the community and encourage them to participate.

Communications Planner

The following is a template that outlines the key steps to be used in developing communications plans. It is recommended that a separate plan be developed for each project.

Developing a Communications Plan		
Step	**Detail**	**Your Community**

1. Define the audience	Who are you trying to communicate with? Define the audience you are trying to reach. For example: • large users of telecommunications such as schools, hospitals and businesses, • municipal governments and local economic development institutions, • government officials in a position to provide financial and other forms of program support; • the media, • community leaders • the public at large,	
2. Assess previous efforts	Have similar communications campaigns been pursued in your community? What were they trying to achieve? What vehicles did they use? How successful were they?	
3. Define the messages	What do you want to communicate? What is it that your audience cares about? What is the common ground between what you want to say and the audience's interests/concerns? How do the messages you want to develop address the following:	

	• a vision of the future: what can be done for the community; • what has to be done • what the ordinary citizen can do • what are the potential benefits for the ordinary citizen • other?	
4. Identify available and effective vehicles in your community	• Public meetings of municipal councils or other local institutions • Other public events, conferences, workshops, luncheons/dinners • Speeches by political and business leaders • Local newspapers • Local radio or television programs (e.g. on cable TV) • Newsletters, bulletins • Minutes of meetings • Posters • Circulars for mass audience • The Internet • Other	
5. Determine access to vehicles	Of the available vehicles, which are most effective? Which will provide access for your group and issue?	

	Which vehicles will incur significant costs and which are cost-free?	
6. Define communications materials	What types of materials are to be used: • Backgrounders and fact sheets • speakers' notes • press releases • bulletins • brochures • articles • Internet messages • copy for posters and ads	
7. Draw up a communications plan	What is the rationale for the communications effort? What issues are being addressed? What messages are being delivered? What actions are to be taken? Who is to take them?	
8. Develop communications materials	Assign individuals to write, edit and proofread the various materials specified in the communications plan.	
9. Implementation	Assign individuals to deal with: • partnering arrangements • production (by whom, at what cost,	

	deadlines) • physical distribution (by whom, to whom, when) • how partners will use the materials to deliver messages at planned events	
10. Follow-up	Develop a media relations plan to monitor the success of the campaign in attracting media attention. Monitor public reaction at meetings, conferences and other forums.	

Role of Websites in Promoting the CBN

Web sites can play a critical role in the CBN initiative as a means of supporting and enhancing the program, and as a focal point for local development. One of the first projects that local communities can undertake is to design a Web site for themselves. It is relatively easy and inexpensive to set up a site and this can give communities a sense of mastery over the technology as well as a feeling that they are now linked to the world. In addition, the local web site can advertise the capabilities of the community to others. Finally, a local website can then focus further development and applications, whether those involve local training and education, health information, business applications or other possibilities. The community can use the site as a joint project around which everyone can organize and in which everyone can participate.

Developing A Web Site		
Steps	**Details**	**Responsibility**
Purpose	To demonstrate the value of telecommunications in establishing internal and external community links and to do so by actively	

	involving those same communities of interest. To attract and service partners outside of the community who are seeking economic and community development strategies involving superior telecommunications services and network applications.	
Objectives	• provide educational materials • by demonstrating benefits, facilitate long-term partnerships • communicate on a timely and regular basis • reflect progress on initiatives to government funding bodies • generate national and international exposure for the Community • demonstrate benefits of multi-sector partnerships • promote Community initiatives	
Goals:		
Education	• prepare fact sheets/FAQ/tutorials on computer and network related information/initiatives • provide timely responses to requests for information by email • create a discussion room or newsgroup to encourage a participatory education process	

Exposure	• ensure site is found by multiple search engines • include URL on all relevant print materials • ensure government facilitators and telecommunications vendors are directed to initiative advancements/successes	
Promotion	• profile Community organization and services • profile Community initiatives • profile Community's successes developing multi-sector partnerships • profile Community's success in attracting government investments • profile Community's combined expertise • prepare news releases • link to news and press releases • provide testimonials	
Partner Involvement	• when major Community achievements put on web site, use email to announce until partners are accustomed to looking on their own initiative • include items requested by partners whenever possible (survey for feedback at regular intervals)	

	• showcase different partner's success stories each month • provide password protected areas of site to allow partners on-line access to more sensitive material	
Communication	• provide background information on the Community organization • create mini-profiles on Community partners (or link to existing web sites) • provide basic funding information on all Community initiatives • post agendas of all 'major' meetings with a minimum one week's notice • post concise record of all major meetings and presentations within three working days • record major advancements on all Community initiatives within three working days • demonstrate value of using electronic methods of information exchange (Internet) and ensure 90% of all Community stakeholders utilize email for these initiatives • acknowledge email inquiries within 24 hours (automated response?) • post all news releases, originating from both the Community and the	

	media, within three working days of availability • provide multiple links to Smart Community site	
Target Audiences:		
Primary	• Community current and potential partners, including administration and political leaders • Municipal, provincial and federal government agencies • community leaders and sector representatives interested in developing telecommunications services and applications	
Secondary	• local and prospective citizenry • telecommunications vendors • current and potential investors/industries/developers • individuals and communities with similar development goals	

DETERMINING INFRASTRUCTURE & OTHER TECHNOLOGY NEEDS

To implement the projects in the action plan, the community will likely require network infrastructure and/or various pieces of applications hardware and software.

Inventory of The Technical Infrastructure

The main component of the technical infrastructure is the telecommunications infrastructure to support networking through the Internet, and private or municipal networks. The first step is to find out what exists already by mapping the existing infrastructure and its capabilities. The key players get together and identify the existing technical resources to which they have or could have access to, e.g. municipal or corporate fibre optic cable, utilization and accessibility; digital subscriber lines; cable modem access; terrestrial or satellite wireless, together with the related networking software and protocols.

The Steering Committee should make use of network experts to help carry out the inventory.

There is also a need to determine whether the existing network infrastructure is:

- based upon open architecture and open standards, so that it would work with other infrastructure (i.e. be interoperable);
- scalable, i.e. able to grow to meet future demands.

If the infrastructure is not based on open architecture and open standards, the community will face extra costs and difficulties. These would be similar to the problems encountered in using proprietary software.

If the network infrastructure is not scalable, the projects will have a maximum size, beyond which they cannot grow. Alternatively, the community will be faced with a future capital expenditure to replace the infrastructure, when it becomes inadequate.

In addition to mapping the existing network infrastructure, the community should take account of a number of important infrastructure-related developments, any one of which could have an important impact on the plans for a smart community.

Government of Canada Task Force

In October 2000, the Government of Canada announced its goal of making high-speed broadband access available in all communities by 2004. A National Broadband Task Force has been established to advise on how best to achieve this. The mandate of the Task Force includes consideration of:

- the needs and characteristics of communities that, without government involvement, will not likely gain access to private sector delivered high-speed services by 2004;
- the technical, institutional and financial barriers that could delay the provision of such services by the private sector;
- the roles governments might play in overcoming these barriers; and
- what the Government of Canada would have to do to engage the carriers and other organizations who may be receptive to deploying these services.

Municipal Fibre Optic Networks

Some municipalities in Canada are installing or studying the business case for building a fibre optic network, in order to provide high bandwidth service. Typically, the municipality hires a network design/engineering consultant. The user specifies the applications and requirements. The users can include the public, municipal authorities, educational institutions and businesses. Essentially, almost limitless bandwidth can be provided, and the payback period is only a few years. Fredericton and Winnipeg are examples. Among other things, they illustrate that a

careful cost-benefit analysis is required. As well, in addition to the technical design of the network, a viable business model is required for sustainable operation.

The City of Fredericton Community Network project has been in the planning stage since August 2000. A high level cost analysis and proof-of-concept were carried out by a consultant. The need has been developed from the perspective of economic development. The City wants everyone connected at ultra-high speed (100 Mbps connectivity on a Gigabit network) on a cost recovery basis. This includes business-to-business, research, government, municipal administration, and the health sector.

Internet service providers (ISP) and applications service providers (ASP) will be invited to offer services on the community network. They will pay an annual subscription rate to connect. Customer connections to ISPs and ASPs will be accomplished by virtual private network, on the amount of bandwidth the ISP/ASP is limited to.

It is anticipated that the project will also deploy a high speed 10 Mbps wireless solution to solve some last mile limitations.

The phase 1 build is expected to be completed by the end of the summer 2001. This will connect Fredericton's Knowledge Park with the University of New Brunswick and cover off various customers in between. There will be connectivity to CANARIE's CA*net3. Phase 1 may also extend to the downtown core.

Phase 2 is scheduled for completion in 2002 and is to include redundant loops around the entire city. As part of the phase 2 planning, fibre to the home projects are under consideration. One such project is being planned in partnership with a local developer. Fibre will be run into 400 new homes. The entire project involves 60 km of fibre.

Winnipeg has completed a White Paper on The Case For Municipal Fibre (August 2000)

http://www.smartwinnipeg.mb.ca/Municipal_Fibre.htm

It provides a good overview of the issues and models for deploying a municipal fibre optic network. The paper concludes that Winnipeg Hydro is well positioned to become a municipal fibre contractor and provider. The business case identifies a number of advantages:

- Winnipeg Hydro has established rights of way, the technical expertise, marketing and billing processes
- pent-up demand for fibre optics from hospitals, schools, universities, and libraries
- lowering service price costs for residents
- substantial reductions in communications costs between city owned buildings, libraries, schools, and hospitals
- excellent return on investment
- short pay-back period.

School Board Fibre Optic Networks

A number of school boards across Canada have opted to commission their own fibre optic networks. Boards in Quebec have been particularly active. As of mid-2000, twenty-six school boards were planning such networks to link their schools. Off-the-shelf ADSL or cable modem solutions are incapable of broadband at the institutional level. The boards have therefore sought custom solutions. In one model, the board commissions the fibre build from a network installer, who owns the network. The board is granted long-term access to the number of fibres needed to serve its users. The surplus (dark) fibre can be sold to other users, or swapped for dark fibre owned by the telcos or cable companies.

Typically, fast Ethernet technology is being used to:

- support high bandwidth (from 100 Mbps)
- support the transmission of a variety of media – voice, data, graphics, images, video
- make it easy to increase network speed.

Network Design

The task is to determine what technologies will be required to implement the projects that have been selected for action by the community. The first step is to develop a design philosophy for the network. Having this philosophy will ensure that subsequent technical decisions are compatible with one another and the technologies required to implement each project will not result in a patchwork of incompatible technologies.

A design guideline that presents the least risk is to use industry-wide open standards and open architectures. Open systems will have the best interoperability with other systems and lowest long-term costs.

Services and Applications Technologies

The network infrastructure enables the value-added services and applications to take place, but does not create that value added per se. These services and applications require their own infrastructure and content. Both aspects of a smart community are equally important.

Therefore, the technology needs analysis has to go beyond the network infrastructure to include the hardware, software, and tools that will be required to implement a service or application. This means that the planned functionality of the services and applications have to be defined.

As a general rule, the community should make use of technologies that are already on the market and have proven to be effective. It is important to demonstrate success early on, and the development of new technology, such as software, presents technical risks, and invariably takes longer and costs more than anticipated. However, the development of new technology should not be ruled out if the service or application is critical to the community.

PREPARING A BUDGET

Every smart community is unique and this fact makes it impractical to specify what the costs should be. However, various cost categories are identified below to facilitate the preparation of a budget. It may be that some of these items will appear in the budgets of various organizations in the community, rather than in one comprehensive budget.

A Budget should include a quarterly cash flow projection that contains the sources and uses of funds for the infrastructure and the services and applications projects. A Statement of Work for each infrastructure and services/applications project should be prepared, that includes the deliverables and milestones, and a cost

breakdown by quarter. The partners for each project should be identified, together with their financial contributions and the value of their in-kind contributions.

The size, value, number and scope of the smart community projects may warrant the purchase of financial tracking and reporting software. The same software could be provided to all the partners, in order to simplify the reporting of information on expenditures, revenues and deliverables, and ensure a common approach.

The following costs should be taken into account in preparing the Budget:

Infrastructure - Installation and Maintenance of The Fibre Optic or Other Network

These costs are comprised of the capital cost of the network (e.g. consulting engineering, construction, permits) and the annual recurring costs (e.g. right of way, maintenance).

Infrastructure - Data Transmission

This includes the cost of the data transmission equipment at the core level (e.g. switches, transceivers) and the distribution level. The annual maintenance cost should also be calculated.

Projects

There is a need for a budget for each service and applications project, that also identifies the deliverables. This should include the estimated costs of maintaining those services on an ongoing basis.

Administration/Management

These are the costs for the office, staff, and Board of Directors. This structure is needed to oversee the implementation of the smart community projects. There may also be start-up costs if an existing community organization (e.g. economic development authority) cannot be adapted for this purpose.

FINDING FUNDING

Communities will rarely find themselves without money to implement the planned projects. A solid strategy and Business Plan will almost certainly attract the necessary funding.

Not all funding will have to be incremental, i.e. entirely new funding. A well-designed set of smart community projects can usually be funded to a considerable extent by shifting existing funding to new uses, and through cost savings.

Initial funding is usually needed to carry out the consultations with the community and develop a strategy, action plan, and business plan. The cost for this up-front work can range from $75,000 to $200,000 in out-of-pocket expenditures. This does not count the time contributed by volunteer community leaders that is free of charge. The needed amount can be put together by obtaining contributions from a number of sources, such as the business community, municipal government, or the local economic development authority.

The resources most critical to the success of smart community projects are the key individuals. These are the people who get things done and can find and provide resources.

Potential sources of funding for the start up and continuing implementation of smart community projects are as follows.

- *Partner Contributions* The success of smart community projects will depend upon building partnerships between organizations. If the projects will serve important functions in the community and meet high priority needs of organizations, those partner organizations should be prepared to contribute to the cost of the projects. Potential partners include the local economic development authority, local municipalities, community groups, social service agencies, health care institutions, school boards, business organizations, individual user companies, utilities, and telecommunications service providers. In addition to providing cash contributions for projects, partners can provide in-kind contributions of needed equipment, services, and the like.
- *Normal Operating Expenditures* Smart community projects will transform the way things are done in the community. This gives rise to the potential to fund projects by reallocating the budgets for existing activities that will undergo change or be eliminated. For example, this could come about through gains in productivity.
- *Government Funding* A number of municipal governments across Canada have become interested and involved in investing in the acquisition of broadband network infrastructure and access for their communities.

Some of this infrastructure will improve and transform the delivery of municipal services and how the municipal government interacts with its citizens. Municipal governments will therefore have to fund the technologies for these services and applications. The regional economic development authority is another potential source of funding, since a smart community provides the foundations for attracting investment and creating new employment opportunities. Potential funding from provincial governments should also be investigated. Provinces appreciate the need for an overall policy and program on information highway infrastructure and its applications. Once the Government of Canada puts its policy and strategy on community access to broadband services in place, this may be a source of funding for infrastructure.

- *User Fees* If the smart community projects provide services to individuals, it may be appropriate to charge user fees.
- *Service Contracts and Fees* A user-commissioned fibre optic network may have unused dark fibre capacity that can be provided to other users for a fee. There may also be the potential to charge for access to software servers or value-added services.

PARTNERSHIPS

The Value of Partnerships

Partnerships enable Community Based Networks (CBN) to do more with less by sharing risks, responsibilities, authority, investment of resources and accountability. They enrich a community's ideas, activities and goals, and they can be key to avoiding duplication of effort. Partners can contribute:

- Funding
- Human resources
- Office space
- Furniture and equipment
- Access to user
- Links with other organizations

To have a successful partnership, there needs to be a clear understanding of:

- the goals of the partnership;
- roles and responsibilities of the partners;
- how decisions are to be made.

Partners in a CBN must be prepared to do business in a manner that is transparent and inclusive because it is the community's needs and opportunities that should guide the partnership. The organizational culture of a CBN partnership places a high value on:
- Championing of a common community vision
- Respect for participants' roles and mandates
- Achievement of goals through collaboration
- Contributing each organization's unique assets and expertise to the partnership
- The pursuit of cost-efficiency and organizational effectiveness

Financial Resources

Perhaps the most valuable thing that partners can do for a CBN is to help with financing. Any community based initiative will quickly confront resource constraints. Until the initiative establishes its credibility, it will have a difficult time raising the human and financial resources it needs to achieve its objectives. Without resources, however, it will have a difficult time establishing credibility.

At the beginning of a project, securing in-kind contributions is easier than asking for cash. Such contributions also help to create momentum. Equally important during this initial phase is the need to engage stakeholders, secure their trust and nurture a willingness to share risks and costs. At this stage, all partners and participants should be kept involved through frequent progress reports. They should also be drawn into working sessions that prepare the next event, the next bulletin or the next action item. At those working sessions, members should be asked to make contributions in kind. Thus, for example, representatives of an institution might volunteer the fax or mailing services of their parent bodies. Or they might undertake to send invitations or newsletters out to their own membership.

A close-knit network can levy such contributions on short notice and it can assign responsibilities and divide up the workload with a reasonable expectation that targets will be met. Obviously personalities are critical to the success of

such a network. The presence of energetic and reliable participants able and willing to carry out simple administrative tasks spells the difference between success and failure.

Partnerships are an important way of sharing resources and optimizing the potential of Smart Community initiatives. Though it is reassuring to have a lot of partners, successful partnering depends less on the quantity of partners and more on their quality. It is important to have people with the right personalities and skills, representing suitable institutions, and performing significant functions in those institutions. Once partnerships have been created, it is important to make sure that all partners are respected and that their views are given equal weight.

Designing a CBN Partnership

Issue for resolution	Possible Answers	Your Community
What organizations exist within the community and what role can they play in the initiative?	• Business Associations • Service Clubs • Large Private Corporations • Municipal Offices • Provincial Departments and Offices • Judiciary/Correctional Services • Federal Agencies • Educational Institutions (Schools, Universities, Training Organizations) • Libraries, Museums, Cultural Institutions • Research Centres • Economic Development Offices	

	• Hospitals and Health Services • Social Services • Foundations • Public Utilities • Volunteer Organizations	
What methods are available for interacting with these organizations, enlisting their support and communicating progress?	• Internal departmental meetings • Sessions of municipal government • General meetings of associations • Corporate meetings • Regular community events • Public Information Sessions • Conferences • Workshops • Lunches/Dinners • Awards ceremonies • Fairs Shows and Exhibits • Special Task Force	
What kinds of support can partnerships with community organizations and the private sector provide?	• funds for sustainability; • increased awareness of project in the community (exposure); • contribution of resources (human, technical, financial,	

	administrative). • in-kind resources such as use of equipment, office, office services • specific subject-matter expertise	
What are the key steps in approaching partners?	• Present the Smart Community (CBN) concept and a proposal for collaboration to the senior management group of each partner. • Develop a partnership agreement with each group that defines how the partner will interact with the initiative. • Ensure that the partnering agreement specifies the partner's roles and responsibilities. • Bring a representative of the partner organization into a Board or Steering Committee meeting. • Set up an appropriate organizational relationship that addresses the need for information, input, project supervision, and coordination	

	in both directions.	
What benefits can partners derive from the relationship (important in persuading them to participate)?	• positive image for the company/organization and added publicity; • community support for long term objectives of the company or organization; • addition of new customers and increase profile to potential future investors; • advancement of technology and connectivity of partnering company/organization; • contributions to not-for-profit Corporation/Organization would be tax deductible.	

Defining a Role for Partners

Partnering will be influenced by the kinds of network applications a community wants to implement. This worksheet offers examples of typical applications and suggests partners relevant to those applications.

Matching Applications to Potential Partners				
Level	Examples of Applications	Potential Partners	Name	Possible Role
Municipal & County Information	Office Automation Asset management Personnel management	Municipalities in the community		

Systems	Financial management Document management Customer Relations Managem't Revenue collection			
Government On-line	Government information Customer Relations Management Licenses and permits Land registry Electronic payment of fines Electronic payment of taxes	Upper and Local Tier Municipalities and their departments		
Health On-line	Hospital Administration Patient Records Medical training Remote Diagnostics (Imaging) Remote Monitoring Tele-triage	Hospitals, Community Health Centres, Medical Staff, Insurance and Pharmaceutical Companies		
Education On-line	School System Administration Professional Development Courseware Development Distance Education Adult and Continuing Education	Educational administration, teachers, universities, private-sector trainers, courseware developers		
Libraries On-line	Library administration Professional development On line catalogues Remote access to holdings Inter-library loans	Upper and Local Tier Municipalities, Provincial and Federal Departments		
Business On-line	Investment Promotion (e.g. Strategis)	Private companies, Business Associations		

	Promote development of the ICT industry and distance learning software Develop an ICT workforce Promote ICT Literacy Jobs On-line Retraining and skills upgrading Electronic commerce	**Economic Development Agencies**		
Communities On-line	Non government action networks VolNet Community-designed applications Volunteer Firefighters Civil Defense/Emergency Measures	Foundations Social Action Groups Volunteer Organizations Other		

Making the Most of External Assistance

Critical to successful community development is the ability to leverage appropriate assistance from various levels of government. This assistance should be integrated into the overall development plan.

Project Requirements	Detail of External Assistance	Possible Source
Research: audit of community assets, concerns, priorities	**Communities need to develop a solid sense of where they are and what their assets are before embarking on a major development effort. They should look for government programs that support activities such as feasibility studies, a situation analysis, or the development of business cases.**	

Public Awareness and Support for Development	Public awareness can best be developed around highly visible initiatives that directly affect the ordinary citizen. Programs such as CAP take the Information Highway directly into the local community and thus can be a major factor in stimulating awareness and support for development.	
Network Infrastructure (connectivity, switching, routing, transmission)	Regardless of the applications chosen, broadband connectivity is critical to success. Both federal and provincial governments have programs specifically targeted at promoting infrastructure development. Local telecommunications service providers play a critical role in this area and also need to be brought into the partnership.	
Applications (functions and services)	**Applications can be the most visionary and appealing part of the process since they are what will most directly change the way people live and work. One place to look in government for support is in departments with specific sectoral mandates (e.g. agriculture). Often they have funding for telecommunications development in their own sector. Private-sector applications developers are also important partners to bring into the mix.**	

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FINALIZING THE BUSINESS PLAN

The vision, policy principles, smart community goals and strategy, the project-based action plan, and the financial plan should be integrated into an overall business plan that spans a period of at least three years. The business plan will be the basis for agreements to be signed by the partners involved in each major activity and project.

In addition, the business plan should contain a governance component, a strategy for the sustainability of the funding and operations of the services and applications, and a performance measurement plan.

Smart Community Governance

A system of governance is required for the implementation of the business plan. .In most cases, the execution of the community's set of projects will be undertaken by the partners for each specific project. This is a decentralized model. Nevertheless, there will be a need for:

- a project management office with a small staff; and
- a Board of Directors that is representative of the community's key partners and stakeholders.

The community may wish to establish a not-for-profit corporation to implement the business plan. Another model is to use an existing corporate organization. Similarly, the existing Board of Directors of an existing community organization, such as the economic development authority, could be used for this purpose. If an existing Board is used, its members should be representative of the stakeholders. On method of achieving this is to establish a Board advisory committee on the smart community project.

Planning For Sustainability

It is important that once the success of a service or application has been demonstrated, that the human, organizational, and financial resources will be in place to allow it to continue on an ongoing basis. The planning for sustainability should start at the project design phase, and not at the point that a project is judged to be successful. Early on, partnerships and financing should be built on the basis that there will be identified organizations that will be responsible for maintaining and periodically upgrading the services and applications of the network.

A project is more likely to be sustainable if:

- the community feels a strong sense of ownership about the project;
- it successfully addresses high priority community needs and challenges, that would otherwise have been unmet or not addressed in as effective a way;
- the community is aware of the project's accomplishments; and
- the project is supported by a practical planning process that will adjust its directions when circumstances change, e.g. changes in the community, technological change.

The community should avoid the practice of running a pilot project whose funding terminates at the end of the pilot, under the assumption that a successful project will somehow attract the necessary funding at some point in the future.

Monitoring Results

The focus of the performance monitoring system should be on results, and the extent to which they have been achieved. This approach obliges management to articulate the results and impacts that are expected over time, and devise ways to measure the extent to which they have been achieved.

A framework is suggested below by which a smart community can develop a Performance Measurement and Reporting Plan that will measure and permit reporting on results and impacts. The framework reflects the need to determine whether the overall objectives of the community's business plan are being realized.

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Performance Framework

Project Goals				
• • 				
Activities	**Outputs**	**Reach**	**Direct Outcomes**	**Ultimate Impacts**
These are the Activities/Project identified in the Business Plan Activity 1	Outputs are the deliverables under each Activity.	Reach refers to the extent of involvement of partners, users, and other beneficiaries and stakeholders.	Direct Outcomes are the effects or consequences of the Outputs. (Medium Term)	Ultimate Impacts are the longer-term results of the Outputs. (Longer-Term)

Activity 2 Activity 3 etc.				
Indicators				
		What is to be measured will be specific to each set of expected Outputs, Reach, Direct Outcomes and Ultimate Impacts.		

COMMUNITY GOVERNANCE

The Importance of Common Decision-Making Principles

A well run community initiative requires successful management of a wide variety of areas including day-to-day operations, information gathering, finances, human resources, technology, partnerships, and longer-term community strategy. Because of this variety and complexity, the potential for misunderstandings, disputes and paralysis is considerable. When establishing an organizational framework for governing and managing a community initiative, members of the community should anticipate potential disagreements by defining how decisions are to be made and disputes resolved. This question is especially relevant in situations where there is no existing structure and where a community consensus is only emerging slowly. Without clear agreement on how decisions are to be taken, an initiative can quickly break down into arguments about process and procedures.

Decision-Making Options

There are a variety of approaches to managing a community initiative. For example, decisions can be taken by a majority vote of the entire community, or by a majority vote among the members of the Steering Committee acting in what they believe is the general interest. When such approaches are used, however, controversy inevitably follows and communities can easily be split. Those who lose a key vote may feel left out and isolated. Successful community engagement depends on forging close and effective partnerships with all of the key institutions in the community. It also depends on inclusiveness that works toward a broad consensus among all members of the

community. One approach that has been used successfully in similar circumstances is known as "consensus minus one." In effect, community organizers make an effort to seek consensus on key issues, but there is general agreement that if one or two individuals do not approve, they cannot exercise a veto and the initiative moves forward.

Leadership

While large issues can be put to the entire community at a public meeting, it is still essential to have an effective executive group leading the initiative. Communities must identify their natural leaders and bring them into the project. Many of these will already be active in existing institutions and organizations. That is why it is desirable to bring these institutions and organizations into the project by inviting their representatives to participate in the Steering Committee. It should be added, however, that the institutions in question tend to be large public bodies such as boards of education, local municipal governments, and hospitals. Consequently the public interest is well represented through these partners. Eventually the Steering Committee can be transformed into something like a Board of Directors overseeing the Community Based Network (CBN) organization and all subsequent development projects.

In such an eventuality, each key member institution should appoint a representative to sit on the Board of Directors. That automatically gives each institution a voice and a vote in all strategic issues affecting the CBN and all subsequent development projects. The Board should meet regularly to review overall policy and direction. Operational authority should be vested in an Executive Director supported by some administrative staff. The Executive Director manages day-to-day operations, engages resources as needed, and supervises all projects operating through the organization.

In an emergency and between Board meetings, the Executive Director has the authority to act. He or she reports regularly to the Board. As an additional technique to ensure smooth relations, special efforts should be made to consult with all partners on an ongoing and informal basis. This might take the form of a telephone call or informal meeting to acquaint the partner with emerging issues. Every effort should be made to minimize surprises and prepare partners for events as they unfold. As a result, the broad consensus that should exist at the beginning of the process can be nurtured and maintained, avoiding the kinds of misunderstandings that give rise to conflict.

Operational Options

The following table summarizes some of the options available for addressing key operational issues faced by a CBN. Each option is described and arguments are presented in favour of and against each option.

Operational Need	Option	Description	Pros and Cons
Basic Organizational Structure for the Community	Independent not-for profit	Combines representation from all groups in community	Pro: vehicle for broad-scale mobilization Con: have to build this from ground up.
	Led by existing organization	Select large existing institution to lead the initiative	Pro: builds on existing strengths Con: initiative too closely identified with only one narrow range of interests.
	Chief Information Officer	Appoint an ICT "Czar" and give him/her powers to enforce standards etc.	Pro: create an authority to override narrow interests and intransigence to enforce common standards. Con: challenges local and institutional autonomy over ICT decisions
	Consortium	A partnership of distinct stakeholders, each of which "owns" a share in the initiative	Pro: vehicle for involving key interests in a community Con: unless well managed, can be viewed as a narrow elite that excludes the public
Provision of Advice	Board of	A legally mandated body that includes	Pro: gives a voice to key partners

to the leadership (Executive)	Directors	representatives of all key stakeholders.	and keeps them involved. Con: can be seen as narrow and exclusive.
	Steering Committee	An informal group of local volunteers	Pro: can be made as broad as required Con: self-appointed and not necessarily representative
)	Advisory Council	Usually made up of knowledgeable external experts willing to provide input on an initiative	Pro: objective and disinterested Con: unfamiliar with local circumstances and conditions.
	Working Groups	Set up for specific tasks	Pro: limited term and specific Con: limited authority
	Technical Groups	Group of subject-matter experts	Pro: effective vehicle for channelling technical expertise. Con: limited political savvy
How decisions are taken by the community	Consensus	Attempt to get everyone to endorse a general policy or strategic direction. Hard and specific decisions are avoided.	Pro: better for building broad-scale momentum Con: difficult to get everyone to agree; hard decisions are avoided
	Consensus minus 1	An attempt to work toward consensus but without the potential for veto in a full consensus model	Pros: maintains broad popular support without a veto Cons: Still may be difficult to get such broad agreement
	50% plus 1	Decisions taken by votes that are carefully counted to determine how the majority	Pros: seen to be democratic Cons: Large disgruntled minority

		voted.	can still block progress.
How to manage public input into the process	Public Information Sessions	Held at the discretion of organizers to report on progress to the public. Can also be used to solicit input and test mood of community.	Pros: Easier to control the debate. No decision-making consequences if things go off the rails. Cons: Could result in limited input and not enough broad-scale buy-in
	Annual General Meeting	A legal requirement in a formally constituted (incorporated) organization.	Pros: broad input received in a formal and organized manner Cons: costly, time consuming
	Surveys	Based on questionnaires sent out to the community at large.	Pro: if properly done can represent a "scientific" sampling of opinion. Con: not relevant to guiding specific day-to-day decisions

Organizational Options

The following template offers some examples of the different types of organizational structures that are available for different purposes. It is important to select a structure that is appropriate to the objectives and partners involved in a specific application.

Organizational Options: Structures Appropriate to Different Applications			
Application Level	Partners	Objectives	Possible Organizational Structure
Municipal Information Systems	Municipalities in the community	Coordinate Data Collection Digitalization Standardize Data Structure Share network	Set up central ICT office with a Chief Information officer that will coordinate all data and networking issues in the community.
Community-On-line	Upper and Local Tier Municipalities and their departments	Smooth flow of data between all levels of government and the public	Community-owned corporation that enters into service agreements with municipalities to deliver their information?
Health Care Sector	Hospitals, Community Health Centres, Medical Staff, Insurance and Pharmaceutical Companies	Integration of medical and patient records, Data collection standards Assurance of privacy/security/reliability, Remote medical imaging Distance medical training to save on travel costs and time away from work	District Health Councils, Special Task Force Medical consortium Provincial and Federal Health Departments Professional Medical Associations

Educational Sector	Educational administration, teachers, universities, private-sector trainers, courseware developers	Inventory of courses, and training needs Standards for courseware to allow for sharing platforms User-friendly design and development (testing with users)	Special task force Educational consortium? Provincial Ministries of Education Professional Education Associations
Libraries, Museums, and Cultural Institutions	Upper and Local Tier Municipalities, Provincial and Federal Departments	Inventory of holdings Data collection standards (for catalogues, images, other types of holdings) Delivery to public	Library and Museum Board of Directors Provincial Ministries responsible for Libraries and Museums Regional Library and Museum Associations
Business On-line	Private companies, Business Associations Economic Development Agencies	Data collection standards Identify appropriate economic and business indicators Design and maintain portal	Local and Regional Chambers of Commerce Local Business Improvement Associations Professional Agencies and Associations
Communities On-line	Non-government action groups Volunteer groups Community organizations Foundations	How to design and introduce community-based initiatives Standards for appropriate use	Community Based Network Corporation Volunteer Sector Bureaus

A Guide to Articles of Incorporation

The following worksheet summarizes key provisions that may be included in the articles of incorporation and by-laws of a community-based organization.

Legal Issues for Inclusion in By-laws of a CBN		
Item	**Explanation/Options**	**Your Community**
Legal Name	By what name is the organization to be known?	
Definitions & Interpretations	Meaning of the key words used in the act of incorporation	
Legal Status:	Is the organization legally incorporated? Is it Not-for-Profit or For-Profit?	.
Objectives	What is the organization trying to do? What are its goals?	
Head Office	Is there a head office If so, what is the address	
Financial Year	When does the year start and end?	
Signing Authority	Who has signing authority?	
Assets and Property	Definition of assets, if any. Disposition in event of dissolution.	

Expenses	How these are tracked and reimbursed to those acting on behalf of the organization?	
Dissolution	Procedures for dissolution.	
Indemnity	What liability protection do Directors and Officers have?	
By-laws	How are amendments to the by-laws introduced? How are amendments ratified and by whom?	
Membership	Who are the members? Eligibility criteria for membership Benefits/rights of membership Annual fees Conditions under which membership may be suspended or withdrawn	
Officers of the Company	Who? How many officers are there? What are their titles? How are they appointed? Length of term Terms of engagement (full-time, part-time, salaried, contracted, volunteer) Duties and responsibilities	

	Vacancies or removal	
Board of Directors	Who are they? Who do they represent? How are they chosen? By whom? For what term? Duties and responsibilities Selection of the Chairman How are decisions taken? Are there non-voting observers? Frequency of meetings Notice of meetings Quorum Borrowing power Resignation, vacation, or removal from office	
Advisors	Is there an Advisory Council? If so, what is its composition? What is the role of the Advisory Council?	
Meetings of Members	Description of Annual General Meetings Who attends? What advance notice is required and when? Quorum Agenda	

	Procedures and how decisions are to be taken	

PROJECT MANAGEMENT

Importance of a Strategic Plan and Project Management

A strategic plan can guide management and implementation of a project, focus activity, and measure when an initiative has been successful. A Community Based Network (CBN) should have a plan to guide the activities of volunteers, community leaders, staff etc. The plan can also be used to gain credibility and inform audiences as to what the initiative is about. A CBN plan should include:

- A mission statement
- A defined primary and secondary focus area
- Identification of key resources needed to address each focus
- Identification of how sustainability can be achieved from its focus
- Agreed-upon operating rules and procedures

The Planning Process

Planning is a disciplined process that seeks to create a consensus through participative management. It involves an open examination of issues to unleash creativity and develop a shared obligation to achieve measurable results. The strategic plan empowers people by challenging them to create an ideal vision and then harnesses their commitment and creativity to achieving that vision. The following is a useful framework for developing a strategic CBN action plan.

Step	The Planning Model	Issues for Discussion	Community Experience
1	Identify the Critical Issues through internal and external analysis.	What problems, if not addressed, will cause difficulties for the community, for specific organizations and institutions: - The need for broadband services to	**Conduct extensive discussions at public forums, and survey users of telecommunications**

			services.
		promote economic development and competitiveness; - The need for broadband services to improve the efficiency and operations of specific institutions such as government, education, health care etc. - The need for ICT literacy in the general population in order to use these applications - The need for skilled ICT specialists to develop new applications and sources of wealth	
2	Form a broad-based Design & Development Team of community leaders, stakeholders and change agents.	Given the applications identified, who needs to be involved and when? Who are the change agents, decision makers, gatekeepers and advocates? How do we involve them?	Start by defining the parameters and priorities of the issues at a high-profile public forum. Form small working groups to address key issues.
3	Develop a Knowledge Base of expertise and resources. Work toward a common understanding of the issues.	Given the applications identified, what do we need to find out about first? Who has this knowledge? How can we get it? How will we use it with partners and stakeholders?	Develop tools (publications, Web site etc.) to get knowledge out to the community
4	Develop the Operative Norms by which the Team will operate and make decisions internally, and how it will partner with others.	In terms of internal operations and in terms of partnerships with others, how are decisions to be made: - by the executive? - by a consensus (minus one) - by a majority plus one	Norms touch on the process by which an initiative evolves, rather than its content. They can evolve in an iterative way, through a series of public forums and

		- other?	working meetings.
5	Determine the Fundamental Beliefs and create a mission statement that will bind and drive the process.	A sample mission statement: " Our community encourages the deployment and use of telecommunications technology and applications as keys to economic and social development." Beliefs in this mission statement include: Government must use ICT to enhance the efficiency and quality of the services it provides to the community. The educational community will use ICT to give all citizens access to quality education. ICT will improve access to and the quality of health care in the community. ICT will reduce disadvantages experienced in rural and remote parts of the community. ICT is a tool for economic and social development It will connect the region to the global marketplace. The government will support free Internet access at public sites to raise interest in ICT.	A set of basic beliefs will evolve on the basis of input at public forums, user surveys, and various vision pieces and papers contributed by volunteers. These can be used to shape decision making as well as the messages delivered to various partners, stakeholders and community groups.
6	Recruit other supporters and advocates to work on small Action Teams to address the critical issues.	Who should the team recruit for work with: Government departments inside the provincial administration? The health-care system? The	A working group of volunteers made up of interested individuals will to participate in the follow-up emerging from public

		educational system? Others?	meetings and discussions.
7	Develop a Draft Action Plan with Strategies to address the key critical issues. Seek input and comment from the stakeholders. Add detail by including a list of tasks and activities. Elaborate on these by assigning responsibilities and setting out timelines.	This should be developed by the Design and Development Team with input from partners, stakeholders and the community at large.	
8	Set a schedule for Review and Update.	A monitoring and tracking system needs to be established to ensure that the plan is being implemented according to schedule.	

Sample Action Plan

The following template can be used to develop an action plan for implementation of any community-based initiative. It has been filled out for one particular action item by way of illustration. Obviously the nature and number of action items will vary from project to project.

Action Item: Work with potential users and service providers to develop a business plan for new applications.				
Objectives	Tasks/Activities	Responsibility	Timeline	Cost
Identify potential users and service providers of shared networks	Research other communities. Survey interested users regarding the Community Network business plan Prepare a list of potential service providers Provide public education regarding the business plan			
Identify present and potential applications and content	Conduct a study to establish technological functional requirements to meet application and content needs State minimum requirement to establish access to shared resources Continue visioning process to anticipate future needs, applications			
Identify costs and	Cost-benefit analysis of today's			

benefits of buying access to shared telecommunication infrastructure.	and future needs Identify revenue sources			

Developing A Knowledge Base

The following are suggestions for the kinds of institutions that could be surveyed in your community to develop a base of knowledge about current capabilities and future requirements. This kind of information is critical for community planning and development.

Survey Targets	To test capacity for…	Sample Questions
Medical facilities	Opportunities for remote medical imaging, integrated patient records, remote diagnostics and monitoring,	1. How significant is ongoing upgrading of skills among nurses, doctors and hospital administrators? Can some training be delivered on-line? 2. Does the region have all of the medical specialists it needs? Must it turn to external specialists in certain cases? Can remote diagnostic technology be used to rationalize the availability of different types of medical specializations in the community? 3. How many health care facilities (hospitals, clinics, nursing homes etc.) are there in the community? Would there be interest in having them share access to a single set of patient records for the entire community? 4. Given the availability of beds for longer-term hospital stays and the types of illnesses normally treated, are there advantages to releasing patients earlier but using ICT to support home monitoring?
Educational institutions	Distance learning, on-demand training, home-based learning.	1. How many educational institutions (primary schools, high schools, colleges, universities etc.) are there in the region? How many students and teachers are there? 2. Are local educational institutions well equipped with computers? Do they have access to the Internet? 3. Are local educational institutions connected to each other and to institutions outside the region? If so, how do they use these connections? 4. Can students complete their education locally or do they finish

		their schooling outside the community? Are there gaps in local course offerings that have to be covered by external educational institutions? Is there a significant outflow of young people seeking education elsewhere? 5. Is business training available in the community, either from public educational institutions or from private trainers? Is there a significant demand from the local business community for business-related training?

Municipal governments	Role of communications in the integration of municipal administration, improved service delivery to public. Feasibility of putting various municipal administrations on one network.	1. Which municipal activities are computerized: Taxes, General Ledger, Water Billing, Accounts Receivable, Accounts Payable, Payroll, Recreation, Building, Human Resources, Internal Mail, Other?
		2. Does the municipality currently have its own Internet connection? How many municipal computers have Internet access? What municipal employees have Internet access and for what purpose?
		3. Is there a municipal website? If so, who is responsible for it? When was it created? How often is it updated? If not, does the municipality plan to create a website? If so, who will design and maintain it?
		4. Would municipalities in the community be interested in exploring the possibility of a coordinated approach to their information systems and technical supports?
		5. How important are the following to your municipality:
		  • Direct internal networking of PCs
		  • Networking of PC's among municipal facilities (i.e.. rec. centres, garages, admin. etc.)
		  • Connection to the Internet
		  • Electronic connection to other municipalities or to the County
		  • Internal/external e-mail
		  • Faxing from PCs

- Training on software applications
- Quick response time to technical support requests
- Communicating electronically with other levels of government
- Communicating electronically with rate-payers
- Accepting electronic payments from rate-payers, developers, etc.
- Communicating electronically with council members
- Communicating electronically with other contacts and suppliers (i.e. auditors, Health Unit, etc.)
- Expediting information retrieval both internally and externally
- Using a web presence to provide information to rate-payers, tourists, prospective property buyers, etc. thus reducing demands on staff
- Using a website to attract investors or tourists to the municipality
- Using a website to guide planning, development, building processes

6. Are municipalities in the region interested in establishing a central GIS system? If so, which of the following types of data would they want to include in such a system: Official Plan (text, mapping), Zoning By-laws, Hazard Land, Wetland, Assessment Records, Municipal Addressing, Census Data, Commercial, Retail, Industrial Data, Local Planning Studies, Recreation Facilities Inventory, Municipal Hard Services Inventories, or Other?

7. Assuming that the costs involved in establishing and maintaining a central GIS system are reasonable and could be equitably shared, to what extent are municipalities willing to participate in such a venture?

Industry Canada   **Industrie Canada**

Businesses	Electronic commerce, external marketing, investment promotion.	1. Are you using computers in your business operations? If yes, what? If no, why not? What is the barrier? 2. Are you using the Internet in your business operation? If yes, what do you use it for? If no, do you intend to hook up to the Internet? Do you have an Internet account? 3. Do you have telephone, Internet or data requirements that, if implemented, would improve your business? If yes, are there any technology-related problems you require assistance with? i.e. after purchase support, etc. 4. Are you interested in computer training that would specifically help you in your business? **5. Are you interested in learning what Internet training can do for you?**
Community services	Improved service delivery and enhanced services.	1. What community groups are active locally? What kinds of services do they provide? 2. Are local community groups computerized? Do they have Internet access? How do they use their computers and Internet links Do they have web pages? 3. Which of the following community activities could benefit from on-line access: bulletin boards, announcements, local discussion groups, registrations, planning, political representation and action, other?
Hospitality industry	Wider and more effective promotion of the community for tourist visits.	1. Is there a significant influx of tourists into the region? If so, what are they looking for? How have they found out about the region? 2. Are there untapped local advantages that can be developed to enhance local tourism? If so, what are they? 3. Is there an opportunity to use the Internet to enhance local tourism in areas such as the following: promotion, information, bookings, other?
Employees	Test interest in telework or	1. How many inhabitants of the region regularly work externally?

	alternative businesses.	Can time in commuting be saved by providing them with connectivity at home?
		2. Is there an opportunity to use connectivity to develop alternative sources of income?

Estimating Resource Needs

The resource requirements of any initiative cannot be predicted in advance with any certainty. Directions will shift and goals will change as the project evolves. A process is required that can treat resource requirements flexibly, adjusting them as circumstance change, as new needs arise, and as new partners and resources become available. While it is difficult, at the outset, to say how much money will be required to start a project, it is relatively easy to identify likely cost items. The following table summarizes some of the types of expenditures likely to be incurred in a CBN initiative.

Type of Cost	Detail	Budget Estimate
Administration	Telephone, faxes, post, couriers, secretarial assistance, facilities for meetings, project management.	
Promotion:	Preparation and production of minutes of meetings, newsletters, brochures; advertisements, briefing notes, background studies, presentations and submissions.	
Travel	Travel, accommodation and hospitality for key individuals.	
Public surveys and tests	Opinion research, feasibility studies, market testing, pilot projects and concept	

	demonstrations.	
Technical consulting	Purchase of specific expertise related to the CBN and its operations	
Legal and Accounting	Incorporation fees, preparation of financial statements, other representation.	

Phasing in Financing

The amount and type of financing required in an initiative changes as the project matures. There is a need for a larger amount of cash at the beginning in order to pay for equipment and set up facilities. Cash requirements will fall once the CBN is operational, especially if staffing is provided by individuals contributed by the deploying companies or by partner organizations. However, the introduction of new applications or services, or the launching of new development projects (e.g. a community web site) will again increase cash requirements.

Sources of Financing

Perhaps the most important initial source of support comes from partner organizations that were willing to assign in-kind resources (part of a staff member's time, facilities, office support). Later, as new projects are defined, it may be possible to secure small financial contributions from partners and supporters. This can also be formalized if and when a CBN is incorporated as a legal entity. At that point, a membership fee can be levied from each of the founding members. The CBN may also be able to tap into donations from individuals and businesses that are convinced of the local benefits it would secure.

One important way of tapping into contributions is through sponsorships. It is possible, for example, to persuade an organization to sponsor a particular event, such as a dinner, or a publication such as a promotional or training brochure. The sponsoring organization can get its name and logo associated with the event or material, in return for

a cash contribution. Large local employers might be interested in this type of sponsorship as a way of demonstrating their commitment and good corporate citizenship.

Tracking Expenditures

A simple cash-flow sheet can be set up to keep track of money coming in or going out. The cash-flow statement can also be useful in predicting when the organization will face deficits or surpluses. This planning tool can help anticipate financial turning points and prepare for them. This simple model of a cash-flow sheet can be set up on a computerized spreadsheet for any period (week, month, quarter) and for any length of time. Obviously, the further out the cash-flow sheet goes, the less firm are the estimates of expenditures and income.

Item	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8
Opening Balance								

Costs
  administration
  promotion
  travel & accommodation
  testing
  technical consulting
  legal & accounting fees
  bank fees & interest								

Total costs per period (subtracted from opening balance)								

Income
  memberships
  dues
  tickets
  sponsorships								

donations grants loans								
Total income per period (added to opening balance								
Closing Balance								

Organization and Management of Meetings

Planning a Meeting		
Item	**Issues for Consideration**	**Detail**
Place	Has a similar meeting already been held at this location? Will the initiative be identified too closely with only one or two lead organizations?	
Date	How frequently are meetings being held?	
Objectives	What do you want from the meeting? What should it accomplish	
Agenda	What issues need to be covered at the meeting? Is there a preferred order to these issues?	
Participants	Who should be invited to the meeting? Who can make the best contribution? What are the specifics of that contribution? Are there individuals who should not be invited?	

Recruitment	What methods can you use to ensure that those who should attend will come to the meeting?	
Link to Previous Events	What previous events can this meeting be linked to as a way of demonstrating progress and building momentum?	
Follow-up	What kind of follow-up is expected from the meeting? Who will be responsible for follow-up? When should the follow-up occur? To whom should a report on follow-up be made?	
Assignments and Responsibilities	Who (could be more than one person) will assume responsibility for the following tasks? - Media Relations & Video Coverage - Hospitality - Registration and Summit Support - Facilitators, resource persons, recorders - County of Renfrew Presentation & Booth - Summit Co-ordination - Audio-Visual Support - Other?	

Conflict Resolution

Inevitably, some conflicts will arise in any community-based initiative. Addressing these early and resolving them creatively can mean the difference between success and paralysis. For example, in many instances, people attend a meeting hoping to add their own personal issue to the agenda. If it does not fit the CBN initiative, however, organizers should be firm in refusing to include it and make it clear that it does not belong. This illustrates the importance of having an unambiguous mission statement – it makes it easier to focus on what needs to be done and exclude irrelevant issues.

It will often happen that there will be those who are unhappy or critical. Organizers should challenge them with the phrase: "Don't tell me what's wrong. Tell me how to make it better." This forces people to address their concerns with positive solutions, rather than simply to vent vague dissatisfaction.

Conflict can be avoided if organizers make a point of treating all partners and stakeholders equally. The size or influence of an institution does not automatically give it precedence in discussions and all points of view have to be heard and considered. In this way, a lot of conflict over "protocol" can be avoided.

Potential misunderstandings can also be defused through personal contact. Organizers can arrange face-to-face meetings to provide information, explanation or reassurance wherever it is needed. This is especially important in addressing the concerns of local service providers who may see the CBN as a threat to their business — a public body doing things that should best be left to the private sector. Personal contact can be used to reassure this group and demonstrate that the initiative actually will stimulate demand for services and eventually enhance their businesses.

The following worksheet offers illustrations of the most common types of conflict that may be encountered in community development. It includes a few suggestions for possible remedies.

Type	Example	Source of Conflict	Possible Remedies
Semantics	"Our goal is to become the most connected	Different understanding of the meaning of	Include a glossary of frequently used terms in your common body of knowledge. Make sure words (especially technical words) are used precisely in meetings and communications.

	community in our province."	words. A mission statement like the example can lead to endless debates and disputes over the meaning of the word "connected"	Avoid the use of words that are broad and ambiguous, especially in statements that are intended to appear on the public record. Such words will only lead to conflicting interpretations later on.
Fact	"Optical fiber is better than coaxial cable or wireless solutions for this community."	Imperfect knowledge of the facts by one or two (or all) parties to the conflict.	Careful research, especially by an impartial third-party or by someone with recognized technical expertise. Sometimes the research will not result in a simple statement. It may yield a series of trade-offs or options at different levels of cost and benefit. The physical characteristics, costs and limits of coax, fiber and wireless can be established through research into these technologies. Each may be used to solve different problems as part of an overall solution.
Institutional Perspectives	An institution already has its own private network. It may be unwilling to share it with others, or it may want others to support its own efforts rather than participating in a neutral community-wide	Different institutions have different mandates, interests, priorities, and accountability structures.	The internal dynamics of each institution must be understood by all of the partners. In particular, core mandates and priorities must be acknowledged and accommodated in any proposed solutions. In the case of the example cited, a clear win-win solution is needed by which the institution can see its cost go down and its functionality improve as a result of sharing its infrastructure development efforts with others.

	effort.		
Commercial Interest	The Community Access program provides free Internet access at public sites. Initially, this was seen by local Internet service providers as a threat to their businesses. [It turned out, however, that CAP created an appetite for the Internet that later led to a growth in ISP customers.]	Conflicts may arise between different businesses that see their interests threatened by a particular innovation or solution.	What initially appears as competition, may in fact turn out to be a means of expanding the size of the "pie" so that everyone benefits. In some cases, there will be a genuine conflict in which the choice of one solution will necessarily undermine the business interests of some portion of the community. In such cases, community organizers need to balance off the interest of a few companies against those of the community as a whole.
Opinion	"I think that the public libraries should be the first institutions to receive broadband connectivity."	Different personal preferences or values.	As long as individuals recognize the conflict as one of differing opinions, they may agree to disagree. Trouble begins if one opinion is given a greater value than another. All opinions need to be heard and respected. However, a clear distinction needs to be made between matters of fact (which can be tested by research or an appeal to experts) and matters of opinion (preferences, wishes, desires). The latter are valid for the individuals holding them, but they may not be shared by the entire community. An opinion

			such as that presented in the example may reflect beliefs about the value of libraries in the community or the importance of libraries as community access points. One way of addressing such beliefs is through a cost-benefit analysis that compares different options and takes the issue out of the realm of opinion and into that of fact-based calculation.
Personalities	"The organizers of this initiative are only using it to further their own interests."	Ambitions, rivalries, personal dislike, feelings of threat.	Because these are private and unpredictable, personality conflicts are the hardest ones to resolve. If they arise and threaten the initiative, it may be wise to minimize contact between the individuals involved by assigning them to different parts of the project. Personal accusations should have no place in community discussions, but if they arise, the best defence is fact-based research coupled with transparent administrative and decision-making processes.

PROJECT MONITORING & EVALUATION

Importance of Performance Measurement

For any large-scale community project, is it important to set out clear and measurable objectives and deliverables. Equally important, it is necessary to define the methods and tools that are to be used to monitor progress and measure how close the community has come to achieving the objectives it has set out for itself. Performance measurement will have several beneficial results:
- It will help communities identify weaknesses that they can correct;
- It will show which approaches are most effective, allowing other communities to learn from cases that have been shown to work;

- It can be used directly to monitor the success of funded projects,
- It will track the success of the investment and if the program is shown to be successful, performance tracking can be used to justify additional activity;
- It will also show what aspects of the program may need improvement or redirection;

The critical issue to determine is what should be measured and how. In some cases, extremely valuable information may be either unobtainable or it cannot be gathered cost-effectively. In many instances it may be necessary to use something that is easy to measure as a proxy for the hard to acquire information that organizers really want.

What is to be Measured

One of the basic principles of program evaluation is that officers should measure results (outcomes) and not just activities. That implies:
- defining what outcomes are expected,
- securing agreement from the community that the expected result is reasonable and achievable, and
- creating an organizational structure biased toward getting results.

It is important to maintain a sense of overall direction, to keep track of how well the project is doing, and to establish some criteria by which organizers know when they have achieved success.

Overall Project Integration

The following is a sample planning sheet that can be used to keep track of development projects and sub-projects. Sample tasks are included to illustrate the kinds of steps involved in the process. Start and finish dates should be included and monitored to keep track of progress. The budget column should track planned vs. actual costs on specific portions of the project

Overall Project	Lead Institution: Project Leader			Project Manager: Executive Director	
Tasks	Responsibility	Start	Finish	Deliverable	Budget

Assemble project management team and appoint managers					
Establish project office					
Update operational plan and review stakeholders/partners projects					
Formalize agreements with stakeholders/partners					
Identify sources of funding; submit applications for financial support					
Establish financial tracking and reporting mechanisms linking partners to funding. Set up regular reporting procedures					
Initiate discussions with local telcos. Define functional requirements of network and test their responses. If necessary, set up RFP for new services and let out to tender. Select supplier(s) and enter into new service agreement(s)					
Monitoring and Evaluation					

Individual Sub-Project Tracking

The following template shows how to track individual sub-projects. Key milestones and deliverables should be integrated back into the overall project plan.

Application x	Lead Institution:			Project Manager:	
Tasks	Responsibility	Start	Finish	Deliverable	Budget
Start-up and orientation; organize project partners, assign tasks, establish liaison.					
Establish tracking and reporting processes					
Identify information requirements; survey user needs					
Develop hardware and software specs					
Issue tenders, award contracts, finalize purchasing					
Install and test hardware/software					
Staff and public training					
Data collection and input					
Functional and user testing					
Launch application					
Monitoring and evaluation					
Modifications and fixes					
Ongoing maintenance					

Monitoring Dependencies

Dependencies between deliverables in one sub-project and those in another need to be identified and carefully monitored, since the failure of one deliverable could affect the overall initiative. The following template can be used to identify such relationship.

Sub Project	Responsibility	Deliverables	Due Date	Dependencies
Application 1				
Application 2				
Application 3				

What to Track

The following worksheets are offered as examples of significant indicators of success. For the sake of demonstration, some of the items have been filled out with illustrative information.

Tracking Success			
Metric	At Project Outset	As of (Date 1)	As of (Date 2)
Connectivity Issues			
Telecommunications Service: - services other than standard voice (56 kbit/s)			
Telephone Coverage: - number of subscribers - % of population with telephones			

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- % with party lines			
Long Distance - configuration of calling areas			
Internet Services - available through means other than standard voice telephone lines?			
Reliability - frequency of service interruptions - length of down-timer			
Availability of Services in Key Sectors			
Education: - no. of computer labs in schools - computers in schools compared to total students - courses available through distance learning - use of Internet for research - use of Internet for courses			
Health - administration - patient records - medical training - diagnostics			

- home care/monitoring			
Public Libraries - on-line catalogues - on-line access to collections			
Municipal Services on line - municipal information - permits and licenses - applications and registrations - payments - scheduling - facilities reservations			
Business - online advertising/marketing - online order fulfillment - online integration with suppliers and clients - online partnering services - other			
Public Access Terminals - number available - client base - number of users - used for what purpose			
Miscellaneous - telework - electronic inventories - job-matching			

- investment promotion - other			
Public Opinion			
Recognition of the importance of telecommunications			
Familiarity with computers			
Use computers at work			
Have computers at home			
Use of e-mail			
Familiarity with Internet			
Have Internet access at work			
Have Internet access at home			
Awareness of local telecom and IT initiatives			
Opinion (support for) local telecom and IT initiatives			
Views on what is most needed in the community by way of telecommunications and IT			
Views on how they would personally like to use (benefit from) telecommunications and IT.			