




NET PLAN

*A community planning guide for
advanced telecommunications services*

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DEVELOPED JOINTLY BY:
Department of Administration
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Minnesota Planning

Minnesota Planning develops long-range plans for the state, stimulates public participation in Minnesota's future and coordinates activities among state agencies, the Minnesota Legislature and other units of government.

NetPlan: A community planning guide for advanced telecommunications services was developed jointly by Minnesota Planning and the Minnesota departments of Transportation and Administration. It is intended as a guide for planning and the state makes no guarantee of its accuracy or efficacy. *NetPlan* is a public document and may be used by any group, organization or individual for any purpose.

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Additional copies of *NetPlan* are available on the Internet or by contacting Minnesota Planning.

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NetPlan

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Introduction

Access to computers and the Internet, along with the ability to effectively use the technology, are becoming increasingly important for full participation in America's economic, political and social life. People are using the Internet to shop for goods and services, work from home or start their own business, acquire new skills using distance learning, and make better informed decisions about their health care needs. The ability to use technology is also becoming increasingly important in the workplace, with jobs in the rapidly growing information technology sector paying wages much higher than the average private-sector wage. Unfortunately, unequal access to technology and the high-tech skills by income, educational level and geography could deepen and reinforce the divisions that exist within American society, known as the "Digital Divide." High-speed Internet access is going to be a key competitive factor for all communities and all regions. Those that do not have this capability are going to be left behind in the New Economy.

Metropolitan cities in Minnesota have their choice of multiple service providers and many smaller cities and towns in Greater Minnesota are also well served. Other communities are clamoring for advanced telecommunications services to meet the needs of their businesses and their citizens. NetPlan is a planning process that will help communities acquire the telecommunications services they need.

NetPlan is designed to:

- Assist communities in acquiring the telecommunication services to meet current and future needs.

- Serve as a blueprint for action to improve telecommunications. Assess needs of communities and identify services and alternatives to meet those needs.
- Increase exchange of information and resources within and between user groups.
- Identify the activities necessary to achieve and maintain the quality and costs of services.

Advantages of Connectivity in Minnesota

Economic advantages

- Increased number of technology and telecommunication companies
- Lower cost for bandwidth into the national information infrastructure
- Availability of new telecommunication technologies, including DSL and Internet access
- Overall reduced costs for access for all entities

Educational advantages

- Decreased costs to school districts and colleges for interactive television, data and voice connectivity
- Increased student access to high bandwidth applications
- Increased research capacity for college faculty via high bandwidth connectivity
- Potential for experimentation in emerging telecommunication technologies

Advantages to private sector

- Decreased costs for data connectivity
- Additional e-commerce opportunities for regional businesses
- Collaboration with businesses and companies outside the region
- Increased connectivity to major medical centers for health care providers

- Improved business opportunities between government and private agencies
- Increased exchange of large data files, including images such as x-rays
- Contracting with specialists, particularly in health care areas

Advantages to governmental agencies

- Decreased costs of connectivity
- Ability to increase bandwidth at reasonable rates
- Increased exchange of information and data among state governmental agencies and with private sector
- Access to newer telecommunication technologies for improved service

Planning Process Overview

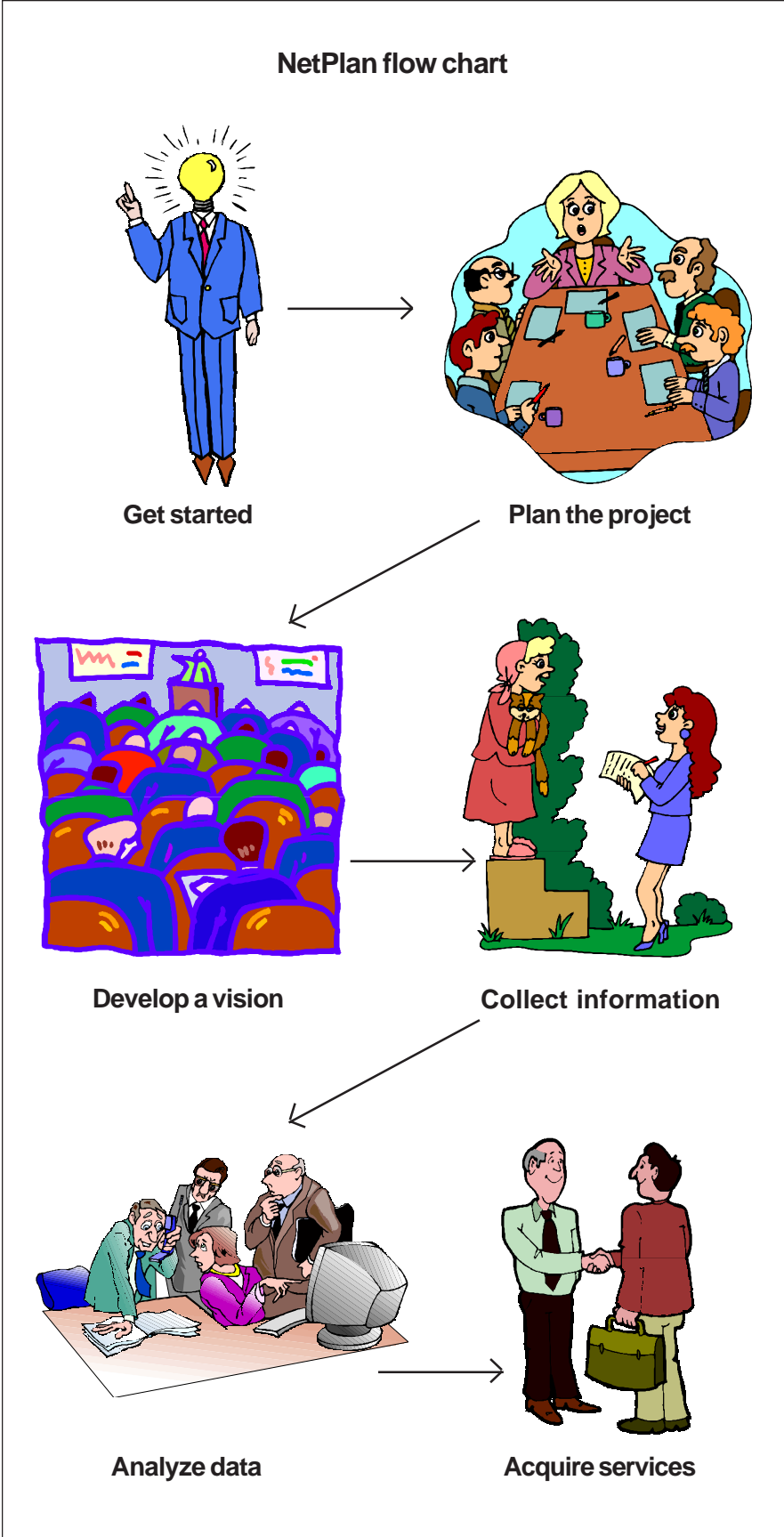
The primary objective of the planning process is to identify the present and future needs of the community for advanced telecommunication services. A prerequisite is identifying and educating stakeholders in the community about telecommunications and its potential impact so they can become informed participants in planning this vital infrastructure.

The planning process involves a broad cross section of the community to ensure involvement of all interested parties. Several initial organizational meetings identify key stakeholders who work with community members to develop a vision. Work groups gather both broad and specific information about the community, its residents and the businesses operating within the community.

Technical work groups condense information captured in surveys and focus groups, develop potential solutions to meet needs, and assess the scope and scale of desired services. This information is compiled in a final report summarizing key information about the community and its desired services. This report should make a case for providing service to the community.

Several committees can help guide the planning process. A steering committee oversees the project. A communication committee publicizes project progress and benefits to the community. A technical committee provides advice and works with the steering committee to identify solutions and acquire services.

The telecommunication planning process should be carefully coordinated with the community's comprehensive planning process. Ultimately



the actions recommended in the telecommunication plan should be incorporated into the comprehensive plan, since it is the guiding document for the community's future development and infrastructure needs. Good communications should be established with the city and county planning staffs within these jurisdictions.

The final outcome of the planning process will be the implementation of the desired services by a local service provider. Services may be provided by the incumbent telecommunication vendor or a new service provider may enter the local market, providing alternatives for the community.

Getting Started



The planning process requires one or more champions who are motivated and willing to move the project to completion. That person or people should contact potential interested parties, including

local government officials and staff, to lay out the objectives and overall planning process. A preliminary meeting should include all likely interested stakeholders to determine if there is widespread willingness in proceeding with the planning process to achieve an outcome.



A steering committee should oversee the planning process.

The committee should include representatives from private business, local government, education, health care, and private citizens. Ideally a member of the planning commission would sit on the steering committee. The committee should be limited to a workable number of members.

The planning process timelines may vary widely with each community. The size of the planning area, numbers of cities involved, number of stakeholders, readiness for action and other factors will affect how long the process will take.

Shorter rather than longer timelines are recommended to take advantage of the initial energy inherent at the project's outset. The level of commitment needed to move the process forward should not be underestimated. It might be advisable to hire a project coordinator to carry out day-to-day activities needed throughout the process.

The steering committee should define the community boundaries, which may consist of one or more cities and counties. At a minimum, the central city or town and the county should be included in the planning process. The community should be large enough to achieve critical mass for a viable infrastructure, but not so large that achieving consensus on objectives would be difficult or impossible. It may be appropriate to establish a formal joint powers agreement among the major stakeholders to give some level of legal substance to the planning group. A fiscal agent should be selected to carry out any contractual arrangements for consultants and to handle any other costs associated with the planning process.

A key objective of the planning process is to involve all interested parties on a regular basis. Project update meetings should be held several times during the planning process to inform the wider circle of stakeholders and to solicit comments about project direction and objectives.

The steering committee should review NetPlan and make modifications as required to meet specific community needs. The committee should deter-

Committees

Steering committee

- Member qualifications: Motivation to move the process to completion, commitment to community development

- Functions:

- Provides overall guidance for the planning process
- Develops budget, finds funding sources, manages finances
- Forms working committees
- Hires consultants, facilitators
- May enter into contracts for service
- Selects governance model

Communications committee

- Member qualifications: Public communication skills, ability to contact media

- Functions:

- Publicizes planning project and meetings
- Develops and implements an educational campaign
- Develops and maintains web site

Technical committee

- Member qualifications: Knowledge of business functions, telecommunication services and technology

- Functions:

- Advises other committees and work groups on technical issues
- Develops solutions to meet identified needs
- Issues and evaluates RFI or RFP

Applications committee

- Member qualifications: Knowledge of business functions and communication needs

- Functions:

- Develops surveys and focus groups
- Gathers survey and focus group information
- Summarizes and analyzes needs information
- Identifies opportunities for sharing

mine the desired timelines and estimate the budget requirements along with potential funding sources for the planning process. The committee should identify outside resources needed to support the planning process. A facilitator should be hired to lead the visioning workshop and a technical consultant will be needed to oversee the needs assessment survey and service provider Request for Proposal (RFP) or Request for Information (RFI). Facilitators and the technical consultant may be members of the steering committee; care should be exercised to ensure that facilitators and consultants are objective and do not have a vendor bias.

A communications committee should be formed to develop and publish information to stakeholders. Communications should include general information about the planning project and its goals to elicit interest in the project, meeting notices, planning activities and accomplishments throughout the project. An additional responsibility would be to educate stakeholders and the general public about project goals, the technologies involved, the issues to be addressed and the benefits to the community.

A variety of communication techniques and tools should be used to reach the appropriate audiences. This might include a web page for wide accessibility in addition to local newspapers, radio, television and other community communications vehicles.

A technical advisory group should be formed to take the lead role in selecting the technical consultant and overseeing aspects of the needs assessment, design alternatives and RFP process. The technical advisory group will also assist in educating the larger planning groups. The technical advisory group should represent community users. If service providers are included in the group, care should be exercised to assure that there is a

NetPlan sample budget			
	Unit cost	Units	Cost
Meeting space - large groups	\$500	3	\$1,500
Refreshments - large groups	\$700	3	\$2,100
Meeting space - workgroups	\$150	12	\$1,800
Refreshments - workgroups	\$50	12	\$600
Supplies			\$1,000
Postage and printing			\$1,000
Clerical support	\$10	120	\$1,200
Facilitator	\$100	40	\$4,000
Technical consultant	\$125	180	\$22,500
Other consultants	\$100	120	\$12,000
Speakers	\$1,000	1	\$1,000
Publicity/Web page development	\$2,500		\$2,500
Total cost			\$51,200

Note: These cost figures are budgetary estimates. Large groups would be 50-100 people; workgroups may be 8-12 people. Units are the number of meetings for meeting cost estimates and billable hours for consultants and facilitators.

Out of pocket costs can be reduced by using public meeting areas. If hotels are used for meetings, room charges are frequently waived if meals are purchased as part of the meetings. Support costs may be reduced through use of in-kind contributions of support work from stakeholders.

balanced representation from all potential service providers. Service providers should not participate in development of the RFP.

When hiring outside professional assistance, communities should follow a well-advertised RFP process followed by a formal review process. The RFP should include an outline of project expectations, including minimum meeting requirements, timeline and output products. The consultant's proposal should provide a clear picture of how he or she will approach the project and interact with the planning staff and other project

participants. It should identify who will work on the project, how much time will be required, the content of the output products, the timelines for delivery, samples of previous work and a list of references including communities the consultant has worked with. Interviewing facilitator and consultant candidates is important and should give the steering committee assurance that the selected candidates will be able to work effectively with the committee and other project participants. It should also reveal potential conflicts of interest with any service providers.

Developing a Vision



Just as most companies rely on a business plan for guidance, communities can benefit from a shared sense of where

they would like to go in the future. A vision clarifies shared values and aspirations, illustrating what a community will look like or accomplish in the future. This picture serves as the basis for developing community goals and objectives and monitoring progress.

An integral part of this process is identifying and discussing major issues the community is facing. Population loss, loss of jobs, difficulty in retaining businesses, difficulty in attracting new businesses and limited educational opportunities are just a few of the issues that might be ameliorated by availability of advanced telecommunications services in the community. Those key issues should be kept in the forefront throughout the planning process to assure that the solutions address them. A purpose statement will help keep a focus on the desired outcomes. An analysis of the community's strengths, weaknesses, opportunities and threats (a SWOT analysis) is a good technique for identifying key issues.

The process of developing a vision is an opportunity to involve businesses, citizens and other stakeholders. A participatory process provides a way for the community to clarify its current situation; identify major issues challenging the community; identify commonly held goals and ideals; examine ways of achieving those goals and ideals; and form a common base for taking that action. The visioning process also serves to educate community members about issues and opportunities.

Activities that can be used to get people thinking and dreaming about their future include brainstorming, visual preference surveys, mapping exercises, nominal group processes, tours, snow card exercises and role-

playing. The process should produce a visual representation of what the future might look like. Videos or slide shows with a high graphic content can be effective in stimulating thinking about what the future might be.

VISIONING TOOLS Meeting agenda

The main objectives of the workshop are to identify the major issues the community is facing, to brainstorm how the future might look, and to establish work groups to work on information gathering and analysis. Communities should tailor the agenda to their own needs and schedule breaks as necessary.

Welcome and plan for the day

- Introduce steering committee
- Present planning objectives, process, timeline and expected outcomes
- Vision presentation, video or speaker

Community issues and purpose

- Form breakout groups: business; government; education; health care; technology
- Develop lists of community issues that drive the need for advanced telecommunications services

Community issues and purpose (continued with entire group)

- Organize and prioritize community issues
- Develop a purpose statement – why the community needs advanced telecommunications services

Community vision for the future

- Brainstorm ideas for uses of telecommunications for the future (breakout groups)
- Organize ideas and develop a description of how the community will look in the future (entire group)

Next steps

- Organize work groups, set timelines and agendas
- Set timelines and agendas for breakout groups or focus teams
- Summarize the day and set next group meeting date

Special Planning Considerations

Telecommunications often impacts land use and should be incorporated into a community's comprehensive plan. Official controls such as zoning and subdivision regulations and official maps ensure that siting and placement of telecommunication services is consistent with the comprehensive plan and other community goals.

Good communications between city and county planning staffs is vital. A planning commission or local planning staff member should serve on a telecommunication planning committee or meet with the NetPlan steering committee.

Local planning groups need to consider siting for wireless towers and installing conduit for fiber optic cable before telecommunication services are installed.

Wireless tower considerations

Local governments should inventory existing wireless towers to determine if co-location is a possibility. Zoning ordinances should be reviewed to see if they prohibit telecommunication services. The *Local Official's Guide - Siting Cellular Towers*, National League of Cities, 1997, lists five conditions that affect local zoning authority:

- Local zoning requirements may not unreasonably discriminate among wireless telecommunications providers that compete against one another.
- Local zoning requirements may not prohibit or have the effect of prohibiting the provision of wireless telecommunication service.
- A local government must act within a reasonable period of time on requests for permission to place or construct wireless telecommunication facilities.

- Any city or county council or zoning board decision denying a request for permission to install or construct wireless telecommunication facilities must be in writing and must be based on evidence in a written record before the council or board.

- If a wireless telecommunications facility meets technical emissions standards set by the FCC, it is presumed safe. A local government may not deny a request to construct a facility on grounds that its radio frequency emissions would be harmful to the environment or the health of residents if those emissions meet FCC standards.

Fiber conduit guidelines for municipal construction projects

These guidelines are intended for planners and engineers planning road construction in Minnesota communities. With the increasing use of fiber optic cable, there is a need for conduit or similar ductwork within cities and between public and private sector buildings and business parks. When construction work is planned, conduits can be placed in roadways to permit future installation of fiber optic cable. The municipality would then be in a position to sell or lease the conduit to telecommunication vendors wishing to provide services in the community.

- A minimum of two (four is recommended) conduits should be placed when the roadway's right-of-way is open.
- Conduit should be HDPE, PVC or steel. For installations in areas highly susceptible to conflicts with other utility work, such as intersecting roads, steel conduit is recommended.
- Hand holes should be placed for pulling fiber at 1,000 feet spacing or less. In cities and towns, spacing should be every second block or less. Special attention should be paid to

providing hand hole access at roads that serve business or industrial parks and other businesses.

Conduit construction should be addressed in the community's subdivision regulations. Communities anticipating such construction should revise their subdivision regulations to ensure that adequate standards are in place for proper installation and placement of fiber conduit before construction permits are requested.

Publications and additional information on implementing telecommunication services are available at Minnesota Planning's Local Assistance Center.

Collecting Information



■ **Use of telecommunication services in the community** by education, city government, state agencies, public safety, health, manufacturing, agriculture, publishing and other private industries. Types of applications such as voice, data and video exchange within and outside the organization. Current capacity and estimate of current expenditures. It is important to assess whether the procurement decision is made locally or outside the community boundaries from a central location.

■ **Estimate of capacity for growth and plans for new uses of telecommunications.** Agencies involved in economic and trade development are an important resource in identifying potential future needs for telecommunications.

■ **Current barriers to expanding telecommunications.** Recognizing that cost is always a barrier, it is important to get a sense of price point ranges for the type of capacity or access desired; that is, the cost a user is willing to pay for the service. Other barriers might be lack of a shared vision, lack of internal infrastructure or systems, lack of local decision making authority or lack of expertise.

■ **Distribution of user concentration within the community and location of potential future development.** This information is likely to be available from local governments and

economic development authorities. The local comprehensive plan will show the type and location of new development. Minnesota Planning has demographic information such as population estimates and projections.

■ **Telecommunication vendors currently serving the community** including type of services provided and typical costs. Knowledge of capabilities beyond current services delivered.

Work groups and the technical consultant should gather information about business and private citizen needs in three key areas: community demographics, businesses and government and residential constituents.

The community demographics work group should represent a broad cross section of the community. Its focus is to gather information about the community including: population by age groups; education; income and family status; businesses by type (service, manufacturing, retail, agriculture) and by size; governmental organizations including local, county, state and federal; K-12 and higher education campuses; private and public health care facilities; and growth projections if available.

This work group should also gather data on the current telecommunication infrastructure including telephone companies, cable companies, wireless and independent service providers. A survey could identify who the service providers are and what services they offer. Costs for advanced services should also be gathered.

The community businesses and government work group should represent local businesses, health care, government and education. Its focus is to develop a survey instrument, to distribute surveys and follow up on getting information, which should be summarized to reflect current and future needs.

The residential work group should include a broad cross section of private citizens in the community. Its focus is to gather information about the needs of citizens. The work group should try to quantify the number of residents who want and are willing to pay for advanced information services. While there are a number of information-gathering techniques available, focus groups might be the most productive way to gather a broad representation of residential needs. The work group should develop a series of issues, acquire a facilitator, select participants and summarize the results of focus group sessions.

Information collected may be organized and analyzed in a number of ways:

- Types of use and level of capacity by user groups
- Future needs, both quantitative and qualitative
- Understanding barriers and an assessment of what is required to overcome them
- Analysis of cost and service gaps

Identifying Applications and Opportunities for Sharing



- Vision for the community
- Issues listed in priority order
- Community needs and plans for growth

In this context, applications are any information exchanges that occur among members of an interest group, such as health care providers and vendors or patients. To identify applications and opportunities for exchange within a community:

- Identify issues relevant for specific user groups: education, health care, government, private sector industries
- Analyze similarities and differences between the groups

At the conclusion of this phase, the planning group should have all the necessary information (needs, solution options, priorities, cost estimates) to begin a public education campaign and other activities to select a course of action for the next phase – procurement and deployment of telecommunication services.

Application work groups should be formed for each area of interest. Work groups should conduct brainstorming sessions to identify applications and their potential for use by the group as well as by other groups. Application priorities should also be considered.

The work groups should explore opportunities for exchange among various sectors of the community. Role playing exercises can help break down conceptual barriers and allow participants to see how information and resources might be shared.

This exercise should result in:

- A list of applications (use of technology in a certain way for a certain purpose) in priority order, and their exchange potential
- Identification of barriers for the development and deployment of applications, including issues related to exchange and collaboration and potential solutions

Identifying Solutions

This task involves developing options and solutions to support the identified applications. The issues identified in the Developing a Vision section should be reviewed to check that the applications address the issues. A work group

NetPlan final report

This section is provided for illustration only. The purpose of this section is to summarize the characteristics of the community and the community's needs for advanced telecommunications.

Community's vision of the future

Describe what the community will look like in 3-5 years.

Discuss the major issues the community will be facing in the future such as loss of jobs and an aging population.

Community profile

Describe and summarize key demographics including growth projections, current business make-up (type, size) and projected business development and growth.

Existing telecommunications infrastructure

Describe who and how services are currently delivered in the community, including telecommunications, cable and wireless services and internet service providers (ISPs). May give cost comparison examples if available.

Advanced telecommunications service needs

Application needs: Describe the local needs for information exchange and identify trading partners within and outside the community.

Example: The major need for businesses in this community is to have high-speed (1.5Mbps and higher) connections to the Twin Cities metropolitan area companies and to the Internet. ISPs in this community need cost effective high-speed (6 Mbps and higher) connections to multiple network access points (NAPs). Citizens need high speed (greater than 256kbps) Internet connections for telecommuting and for education.

Connection needs: Describe connection requirements among local businesses.

Example: An intranet is needed to connect local businesses to public departments – county courthouse, city hall, police department – for document transfer and e-mail. The hospital needs a 1.5 Mbps or higher connection to hospitals in Duluth and St. Paul.

Service potential: Describe specific needs of community businesses.

Example:

There are 11 small businesses (1-20 employees) that use the Internet or wide area communications in the area. Forty percent are not satisfied with their current connection speeds.

There are 4 medium businesses (21-100 employees) that use the Internet or wide area communications in the area. None are satisfied with their current connection speeds and costs.

There are 487 residents that have home computers. Eighty-five percent are connected to the Internet. Sixty percent of those currently using the Internet are willing to pay more for higher speeds.

with technical and business skills should be organized for this phase of the project. This work group may include representatives of present and potential telecommunication carriers to tap their knowledge and expertise in potential solutions. The effort of this group should result in:

- Prioritized list of options for deploying the applications
- Likely cost scenarios and risk for each option
- A review of issues identified in the Developing a Vision section
- Recommended course of action

Acquiring Services



There are at least four methods of acquiring services for the community. The simplest is to issue a Request for Information to identify available solutions that can

then be purchased by any community organization. The second alternative is to establish a joint powers agreement among the public sector organizations. A third alternative would be to establish a private nonprofit organization, essentially a purchasing cooperative to contract for services. A fourth possibility is to select a municipal department to be the local service provider. These alternatives are discussed below.

Telecommunication service providers do not usually require any particular franchise agreement with local governments to provide service within the community. Some level of license is required from the state Public Utilities Commission to conduct business. The local community typically does not have control over the services provided by telecommunication service providers, but does have

control over public rights of way necessary for any local construction.

A Request for Information (RFI) may be issued to get prices for a defined set of services. Individual entities may then contract with the service provider for the services desired. The disadvantage of an RFI is that it may not result in the most attractive service and price proposals since there would be no guarantee of any level of business to the service provider. One advantage of this approach is that it does not require formation of a new entity to administer a contract.

An alternate structure would be to create a purchasing cooperative to contract with the selected service provider. This structure within the public sector is covered by a joint-powers agreement. A purchasing cooperative would be able to contract for service, and to give some assurance of the level of business available to the service provider. That assurance may simply be in the form of volume discounts based upon the aggregate business volume purchased by members of the cooperative. Or the cooperative may want to guarantee some level or proportion of the available service requirements to a new service provider.

A purchasing cooperative including both public and private sectors can be formed under legislative authority of Minnesota Statutes, section 308A.210. The cooperative would establish and administer purchase contracts, and provide an oversight board to develop and manage operating policies. An advantage of this structure would be the capability to monitor service availability, quality and pricing to assure the community is getting the service it requires.

A municipal department could be established to provide services to both

Joint Powers Agreement

Minnesota's Joint Exercise of Powers Act, Minnesota Statutes 471.59, is the fundamental legal basis for cooperation among local units of government in Minnesota. The law was passed in 1943 in response to an increasing interest among municipalities to share or contract for services with other local governments. Periodically amended, the law authorizes governmental units to enter into voluntary agreements to perform jointly or cooperatively a service or function where the authority to perform the activity is common to all participating parties. The law basically provides for two types of arrangements: one is when responsibility for the service provision, including the establishment of joint boards, is shared among parties in agreement; the other is a service contract where one governmental unit purchases a service from another such unit. There are two exceptions to this general authority, when either the supplier or the requestor does not have the authority to provide the service or function itself.

Units of government authorized to cooperate in Minnesota include:

- Cities
- Counties
- Townships
- All school districts
- Other political subdivisions including conservation, sewer, hospital and park districts
- Political subdivisions of other states
- State agencies
- U.S. agencies

Shared responsibility is the most common type of joint powers agreement among cities and counties. Service contracts are somewhat more common among townships.

Examples of joint powers agreements are available at Minnesota Planning's Local Planning Assistance Resource Center at 651-296-6550 or by searching online using PALS (Project for Automated Library Systems) <http://www.pals.msus.edu/webpals/> and going to the Minnesota Planning Web page at <http://www.mnplan.state.mn.us>

public and private sector telecommunications users. There are a number of models for this structure including the cities of Alexandria and Detroit Lakes.

Service monitoring

Regardless of what structure is formed to procure services, some mechanism should be established to monitor the services on an ongoing basis to assure that they are meeting the community's needs. If a purchasing cooperative is formed, ongoing monitoring would be a function of the cooperative board. If some other form of procurement is used, a monitoring group should be formed representing all stakeholders. If an oversight board is formed which may be the original steering committee, the monitoring group should report on the status of service offerings on a periodic basis. Some communities have a telecommunication administrator who would be in a position to fulfill this function. If an administrator is not available, it might be productive to establish such a position. The Minnesota Association of Community Telecommunications Administrators is a good resource for more information. If the services provided do not meet requirements, or if new services are needed, the oversight board can issue a new RFP or RFI to acquire such services.

Selecting a service provider

At this stage service needs and potential solutions have been identified. The next step is to issue an RFP or RFI and negotiate a contract for services. Even if service providers have been involved in planning, it can be beneficial to open up the bidding process to a wider audience. Several paths may be used to get an RFP or RFI out to as many vendors as possible. A public notice can be placed in local and major state newspapers inviting vendors to

participate in the bidding process. A notice can be placed in the State Register, a vehicle for posting state bid requests. Notices can be published in the newsletters of the Association of Minnesota Counties and the League of Minnesota Cities. State associations of service providers, such as the Minnesota Telephone Association and the Minnesota Cable Communications Association can be contacted directly.

When these notices have been issued, it may be productive to hold a pre-bid conference to give potential vendors an opportunity to ask questions and clarify any issues. A draft RFP should be written before the conference, clearly stating the objective, bidding process instructions and evaluation criteria that will be used to select the vendor. It may be helpful to send the RFP out for vendor comments before the conference.

After the conference, the RFP should be updated and issued to all requestors. After a reasonable time, all responses received from interested vendors should be reviewed by the evaluation committee, using established criteria. A point system can be a useful way to evaluate responses.

As part of the evaluation process, the evaluation committee may want to interview the top vendors.

When evaluations are complete, the responses should be ranked according to point totals. Select members of the steering and technical committees and the technical consultant can then enter into negotiations with the top vendors.

Additional Resources

- Cheat sheet
- Funding resources
- Hiring outside resources
- Visioning tools
- Graphic resources
- Educational materials
- Application requirements examples
- RFP format
- Survey forms

CHEAT SHEET

The Cheat Sheet is a brief summary of the activities recommended for communities planning for advanced telecommunication services. It can also be used as a check sheet as the project progresses. The detailed descriptions of the tasks needed to conduct the project are contained in the *NetPlan* document.

Getting started

Leader

Project champions



Participants

Interested individuals representing private business, local government, education, and health care.

Action steps

Champions convene initial planning meeting
Determine level of interest
Conduct preliminary meetings
Form steering committee
Develop work plan
Determine area to be included
Identify potential participants in planning process
Identify support staff
Develop a preliminary budget
Determine funding sources
Enter into joint powers agreement if required
Identify fiscal agent
Form communications committee
Form technical advisory group
Schedule the visioning meeting
Hire meeting facilitator
Hire technical consultant

Resources

Project champions
Meeting space
Meeting scribe
NetPlan document

Outcomes

Steering committee formed
Communications committee formed
Technical committee formed
Project plan documented
Preliminary budget established
Funding sources identified
Support staff identified
Meeting facilitator hired
Technical consultant hired
Meeting plan and timelines established
Visioning meeting scheduled

Developing a vision

Leader

Meeting facilitator



Participants

Broad cross section of all stakeholders including private business, government (local, county, state), health care, education, libraries and citizens

Action steps

A vision can be developed during a workshop led by an experienced facilitator. The workshop should include the following elements:
Description of the planning process
Examination of the community's strengths, weaknesses, opportunities and threats (SWOT analysis)
Brainstorming community issues
Developing a purpose statement
A visual presentation of communications possibilities
Forming work groups for specific applications: business; education; health care; government; technology and communications

Resources

Visual aids such as video or slide show
Facilitators for each focus group
Scribe to write consensus future vision
Sample meeting agenda

Outcomes

Prioritized list of important issues and concerns the community is facing
Vision statement: a short written description of how the community will look in the future
Focus groups to identify application needs

Collecting information

Leader

Applications committee



Participants

Work group participants representing education, government, business, health care and citizens

Action steps

Form work groups
Review and modify survey forms as appropriate
Collect user information
Organize and analyze information for each user group
Summarize findings

Resources

Technical consultant
Work group leaders
Work group participants
Survey forms
Postage
Focus group facilitator
Meeting facilities

Outcomes

An inventory of current use of telecommunication services and an estimate of future needs
Description of major industries currently in place and potential future additions
Description of geographical areas planned for growth
An understanding of infrastructure gaps from both cost and service delivery perspective
Description of citizen interest in advanced telecommunication services

CHEAT SHEET (continued)

Identifying opportunities for sharing

Leader
Applications
committee



Participants

Application work groups representing
business, government, education, health
care and citizens
Solutions development work group

Action steps

Form application work groups for each of
the user groups
Review survey information to understand
the existing situation
Brainstorm ideas for applications that are
needed
Assess potential for successfully deploying
each application
Analyze barriers to success
Prioritize applications based upon ease of
deployment and benefit of success

Resources

Brainstorming facilitators
Technical consultant
Applications work groups

Outcome

A report summarizing the applications
needed by user groups in the community
and potential for sharing applications.

Identifying solutions

Leader
Technical
committee



Participants

Solutions work group

Action steps

Form solutions work group
Review and consolidate applications
Identify potential solutions for each
application
Develop cost estimates for each solution
Prioritize solutions on the basis of benefits
to the community in achieving its vision

Resources

Technical consultant
Solutions work group

Outcome

A report summarizing the potential
technology solutions needed by user
groups to support the desired applications.
Solutions should be prioritized based upon
the benefit to the community and should
include some indication of scale or volume
of use.

Acquiring services

Leader
Technical committee



Participants

Technical committee
Technical consultant

Action steps

Develop a draft RFP
Set up a pre-bid conference
Invite vendors to attend
Write final RFP
Issue RFP
Evaluate responses
Select vendor for final negotiations
Negotiate a contract for services

Resources

Technical consultant
Pre-bid conference space

Outcome

RFP that describes what services are
desired
Contract with a vendor for services

FUNDING RESOURCES

The following financial and technical resources assist local governments and their partners to plan for statewide fiber optic networks to meet public and private demand.

Blandin Foundation. Information about the Community Leadership Program is available at these web sites: <http://www.blandinfoundation.org/programs.html>; <http://www.blandinfoundation.org/Grants.html>

Initiative Foundation. Provides comprehensive and integrated community development, leadership training and public participation. Call Karl Samp at 320-632-9255.

Initiative funds. Funded by the McKnight Foundation, six initiative funds provide grants, make loans and structure programs to meet the social and economic needs of state regions. More information is available at: <http://www.mcknight.org/mif.htm>

McKnight Foundation. Community improvement and economic development is a component of the Children, Family and Communities Program. More information is available at these web sites: <http://www.mcknight.org/programs.htm>; <http://www.mcknight.org/apply.htm>

Regional Development Commissions. Identify and find solutions to problems affecting their regions, assist some state agencies in implementing programs at the regional level, provide planning assistance directly to local units of government and respond to the needs of the various interest groups within the region. There are currently 10 regional development commissions serving Minnesota.

Department of Trade and Economic Development. Information about the redevelopment grant program, transportation revolving loan fund, and small cities development program can be found at: <http://www.dted.state.mn.us/02x00f.asp>

HIRING OUTSIDE RESOURCES

Technical consultants

The planning group should hire a technical consultant to help with the planning process. The technical consultant will assist the steering committee, the technical committee and the various work groups, in assessing needs, developing solutions and acquiring services. The technical consultant should be vendor independent. Planning groups should conduct appropriate interviews and reference checks when hiring a consultant, and should also consider qualifications in the following areas:

Industry knowledge. The consultant should have a minimum of five years experience working in the telecommunications industry at an application level. Experience in design, engineering or planning is desirable.

Working with groups. The consultant should have successful experience working with customer groups. Reference checks are important here.

Technology. The consultant should be conversant with current technologies, including routed or IP networks, carrier services including SONET and ATM, and end user technologies such as LANs and networked video services.

Telecom vendors. The consultant should be knowledgeable about the various telecommunications vendors working in the area, including cable and wireless service providers. The consultant should have a good grasp of current service offerings and prices available in the community.

State network. The consultant should be aware of what services are available to public sector organizations from the statewide area network.

Meeting facilitators

Meeting facilitators assist the planning committee in developing a meeting agenda and objectives, manage meetings to accomplish the objectives, and ensure that the meeting results, including next steps, are documented. Meeting facilitators may be needed for workshops and other large group meetings. Smaller workshops may be facilitated by members of the planning group, or may be hired specifically for those activities. Planning groups should conduct appropriate interviews and reference checks when hiring a facilitator.

Facilitator qualifications

- Skills and experience to effectively manage interactions among large diverse groups including government, industry, business and private citizens.
- Proven ability to focus groups on achieving the meeting objectives.
- Demonstrated ability to deal with technology issues and concepts.

On state contract

Department of Administration Management Analysis Division, 651-297-3904.

VISIONING TOOLS

Graphic resources

The Many Faces of BEV
15 minute video, available upon request
www.bev.net

The Blacksburg Electronic Village
1872 Pratt Drive, Suite 1500
Blacksburg, VA 24060
540-231-4786

The Many Faces of BEV is a series of interviews of Blacksburg, Virginia residents, who tell their stories of how electronic networking is helping members of their community communicate with each other more effectively. Established in 1993, the Blacksburg Electronic Village serves as a model of how advanced telecommunications can affect a community. The interviews give insights into how private sector companies as well as government organizations and private citizens make use of the communications capability of the network. The video would be a useful tool for a NetPlan steering committee and other groups at the start of the planning process. A *Community Network Briefing Book* with detailed information about how connections are made and how the network is used is also available at the web address above.

Connections

14 minute video, approximately \$10
Order from: AT&T, 1-800-922-3827

Connections is a story about the role advanced communications plays in the lives of a family. The mother, a physician, uses technology to analyze, communicate and prescribe the appropriate prosthesis to an amputee in another location without leaving her office. The father, a planner, shows alternative designs schemes to proponents and opponents of a city project. The daughter communicates with her fiancée's parents in Belgium using technology that displays pictures and translates the message. This video may

have limited application for NetPlan but does illustrate the power and opportunities of technological advances in communication.

Connecting to the Future
22 minute video, \$26

Order from:
NASA CORE Lorain County JVS
15181 Rt. 58 South
Oberlin, OH 44074
Fax: 440/775-1460
<http://quest.arc.nasa.gov/top/video1.html>

Connecting to the Future is a video produced by the U.S. Department of Education and the National Aeronautics and Space Administration. The video focuses primarily on developing a technology networking plan and strategy for schools, although the planning process could be used in other community applications. The video relies primarily on interviews with technology and education experts but fails to emphasize key points. Overall the video is worth viewing because it integrates basic planning activities with developing a technology plan.

Educational materials

Public participation publications to supplement NetPlan include:

A Guide to Community Visioning: Hands-On Information for Local Communities.
Oregon Visions Project, Oregon Chapter of the American Planning Association, 1993.

Building Citizen Involvement: Strategies for Local Government. Washington, D.C.: International City/County Management Association, 1997.

Peterson, Mark. *Harnessing the Power of Vision: Ten Steps to Creating a Strategic Vision and Action Plan for Your Community.* Little Rock, AK: Cooperative Extension Service, University of Arkansas, 1995.

Van Houten, Therese and Hatry, Harry P. *How to Conduct a Citizen Survey.* Chicago: American Planning Association Planning Advisory Service Report 404, 1987.

APPLICATION REQUIREMENTS EXAMPLES

Survey information should be analyzed and summarized to develop a Request for Proposal. Sample application requirements include the following:

Education

- Internet access for e-mail, web research and some streaming video.
- High-speed connection (100 Mbps or greater) between educational buildings within the community for data transfer and access to centralized databases.
- Deliver distance education programs to businesses and students at home in a variety of ways: interactive two-way delivery of education; one-way delivery of education from a stored source such as video streaming; access to and delivery of programs outside the community.
- Access to community and school library resources.
- Access to school information for parents and students such as homework assignments, grades and attendance notification.
- Connection of student portable devices to school and college servers. High-speed connection to and from residential homes.

Government

- Internet access to state and federal government databases.
- High-speed connection (100 Mbps or greater) between local government (city, county, public safety) buildings within the community.
- Provide electronic services such as property tax records and land use information to community residents.
- Provide telecommuting opportunities to workers as if worker is on site. Primarily e-mail and remote LAN access. Applications are primarily database searches. Occasional videoconferences with central office.
- Encourage citizen participation and electronic exchange of information including public meeting notices, minutes, issue discussions and surveys.
- Conduct judicial meetings and hearings remotely via video conferencing connections.
- Be a gateway to other sources of information including business development, state and federal level activities and hearings.

Business

- Internet access for business transactions and local web page services.
- Provide telecommuting opportunities to workers as if worker is on site with e-mail and frequent CAD file transfer applications.
- Onsite access to training resources from educational institutions.
- Easy access to video conferencing capabilities for meetings.

Health Care

- Internet access to state and federal databases and to streaming video.
- Electronic access to onsite training materials.
- Ability to connect via real-time video to hospitals and doctors within and outside the community.
- Ability to send diagnostic data (including x-rays and CTI scans) to health facilities within and outside the community.
- Remote video visits by patients to local and distant health facilities.
- Remote access to patient data for delivery of health care at home.
- Electronic access by nursing home and elderly care facilities to patient's doctors and pharmacies for online consultation.
- Telecommuting opportunities to onsite workers. Primary applications require access to patient records. Data privacy is critical.

APPLICATION REQUIREMENTS EXAMPLES (continued)

Sample Solutions for Education, Government, Health and Business

- High-speed (fiber based: OC-12, OC-48) community networks are developed with multiple access points including schools, higher education sites, city and county centers or business sites.
- Gateways to aggregate demand and connect to external services via Internet at DS3 or OC3 speed. Gateways may be located at college facilities, county courthouses or co-located at service provider facilities.
- Video conferencing facilities and capabilities at schools, colleges, libraries and government centers are available to the community and businesses for a per use charge.
- Training (real time or on demand) using interactive video or video streaming. Public sector and business collaboratively develop and distribute content using Web technologies for authorized users.
- High-speed (T1 or higher) connection to hospitals and health consortium data sources.
- High-speed connection to telecommuters using DSL and cable modem technologies.
- Possible technologies: Fiber, DSL, cable, wireless for local access and transport using SONET/ATM/IP as appropriate. Video streaming and room and desktop video conferencing (H320, H323) equipment. Web-based tools for creation of content and browsers for access.

Residential Solutions

- High-speed access to Internet via DSL, cable, wireless.
- School district allows access to student data (homework, grades, lunch information) by parents via the Internet.
- Remote access to health clinics, doctors, pharmacies via desktop video using DSL or cable modem.
- Access to real-time training, video delivery of live lectures via video streaming.
- Access to library of training materials via on-demand video streaming. Source may be library, schools and colleges
- Access to public information and knowledge of available community resources using high-speed (DSL, cable modem) connections.
- Possible technologies: DSL, cable, wireless for local access, video streaming, desktop video, community based web data store.

Possible Design Solutions

Fiber-based community network with multiple access points. Connected to this backbone are various resources including:

- Internet service provider
- Community based web host
- One or more shared video conferencing facilities.
- Interconnection to local DSL/cable/wireless provides for residential access
- School district network for access by parents and students
- Businesses and residents with appropriate workstation (desktop video, voice)
- Standards based connection to resources outside the community such as hospitals, courts and educational sites

Note: Multiple design solutions exist. They will be different for each community. Solutions can be developed and managed by the community or provided by service providers.

RFP FORMAT

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Community Needs Assessment Survey

Our community is conducting local planning for our telecommunications infrastructure. As part of our planning process, we are assessing our current technology capacity and use, and our future needs.

Please take a moment to fill out the following survey.

(1) Where do you live? (2) Which of the following do you have in your home? Check all that apply.

- | | | | |
|--|---|---|---|
| <input type="checkbox"/> 1 Within a city | <input type="checkbox"/> 1 A regular telephone | <input type="checkbox"/> 4 A cell phone | <input type="checkbox"/> 8 A VCR player |
| <input type="checkbox"/> 2 In a rural area | <input type="checkbox"/> 2 More than one telephone number | <input type="checkbox"/> 5 A television set | <input type="checkbox"/> 9 A DVD player |
| | <input type="checkbox"/> 3 A fax machine | <input type="checkbox"/> 6 A satellite dish | |
| | | <input type="checkbox"/> 7 Cable television | |

(3) Does your home have a computer?

- 1 Yes **Go to Question 5**
 2 No **Go to Question 4**

(4) What are some of the reasons why your home does not have a computer?

- | | |
|---|---|
| <input type="checkbox"/> 1 No need for a computer | <input type="checkbox"/> 4 Do not know how to use one |
| <input type="checkbox"/> 2 Not worth the price | <input type="checkbox"/> 5 Can't afford one |
| <input type="checkbox"/> 3 Can access one at work, school, library or elsewhere | |
| <input type="checkbox"/> 6 Other: _____ | |

(5) Do you have Internet access at home?

- 1 Yes
 2 No **Go to Question 15.**

(6) On average, how much time do you spend on the Internet?

- 1 One hour or more per day
 2 Between one hour per day and one hour per week
 3 Less than one hour per week

(7) - (12): How satisfied are you with the following characteristics of your Internet service?

	Satisfied	Neutral	Dissatisfied
(7) Speed of operation	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(8) Price of services	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(9) Customer service	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(10) Reliability (system is "up")	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(11) Accessibility (no busy signals)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(12) Your choice of providers (competition)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

Future uses of technology

(13) - (14): If another service provider was to offer telecommunications services (voice, cable, Internet) to you, would you be willing to pay more than you currently pay if...

	Yes	No	Don't know/not applicable
(13) the provider offered higher speed service?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(14) the provider offered improved reliability and customer service?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

(15) - (16): If the following applications were available to you using a high-speed connection, would you use them?

	Yes	No	Don't know/not applicable
(15) Telecommuting to work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(16) Taking classes from schools and colleges at home	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

(17) If the following information from your city, county, or other sources were provided electronically over the Internet, which ones would you be likely to access? Check all that apply.

- 1 Meeting notices, agendas, minutes
- 2 Community library catalogs and electronic library resources
- 3 Special-interest-group (e.g., seniors, youth) bulletin boards
- 4 Property tax records
- 5 Maps (GIS, land use, directions, street maps)
- 6 Business listings in the community (e.g., yellow pages)
- 7 Job opportunities in the community
- 8 Rules, regulations and ordinances (e.g., building code)
- 9 Weather and road conditions
- 10 Other: _____

(18) Do you have children attending a local school?

- 1 Yes
- 2 No **Go to Question 20**

(19) What information or communication would you like from your local school using a home computer and an Internet connection? Check all that apply.

- 1 Homework assignments
- 2 Grade reports
- 3 School activity announcements
- 4 Lunch menus
- 5 Communication with school staff and/or the bus company

(20) Do you plan to start an Internet-based business in the next two to three years?

- 1 Yes
- 2 No
- 3 Already have an Internet-based business

Thank you for completing the survey.

Telecommunications Needs Assessment

Part A: General Questions

Our community is conducting local planning for our telecommunications infrastructure. As part of our planning process, we are assessing our current telecommunications capacity and use, and our future needs. Please take a moment to fill out the following survey. Please make sure that the circles are completely filled and mistakes completely erased.

Background information

(1) **Name of organization** _____

(2) **Contact person's name** _____

(3) **Phone number** _____ (4) **E-mail address** _____

(5) **Type of organization**

- | | | | |
|--|--|---|---|
| <input type="checkbox"/> 1 Agriculture, forestry, fishing, or mining | <input type="checkbox"/> 4 Public utility | <input type="checkbox"/> 7 Finance, insurance, or real estate | <input type="checkbox"/> 10 Public administration |
| <input type="checkbox"/> 2 Construction | <input type="checkbox"/> 5 Wholesale trade | <input type="checkbox"/> 8 Health care | <input type="checkbox"/> 11 Education |
| <input type="checkbox"/> 3 Manufacturing | <input type="checkbox"/> 6 Retail trade | <input type="checkbox"/> 9 Telemarketing | |
| <input type="checkbox"/> 12 Other: _____ | | | |

(6) **How many employees work at this location?**

- 1 1-10
- 2 11-20
- 3 21-50
- 4 50 or more

(7) **Where are telecommunication decisions made in this organization?**

- 1 Local
- 2 Non-local (e.g., corporate headquarters)
- 3 A combination of local and non-local

Current telecommunications services

(8) - (13): **What type of service provider do you have for the following services?**

	Telephone company	Satellite provider	Cable company	Internet service provider (ISP)	Not applicable
(8) Basic telephone service ..	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
(9) Multiple-line phone system	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
(10) TV programming	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
(11) Dial-up Internet	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
(12) Cable modem Internet ...	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
(13) DSL	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

(14) **Do you have a computer?**

- 1 Yes
- 2 No **If you answered "No," go to Page 3.**

(15) **Is your computer connected to the Internet?**

- 1 Yes
 - 2 No
 - 3 Not applicable
- If you answered "No," go to Question 25.**

(16) What is your current telecommunications capacity?

Note: Your telecommunications capacity measures the amount of information that can be transmitted or received. The value of your capacity can usually be found in your contract or service agreement with a telephone company or cable company.

- 1 Business line with dial-up connection
- 2 Dedicated 56K
- 3 ISDN
- 4 256K DSL
- 5 1.5M DSL
- 6 Dedicated T-1
- 7 Multiple T-1 to DS3
- 8 Greater than DS3
- 9 Don't know
- 10 Not applicable

(17) - (18): What is your likely capacity need for Internet access in the future?

	Same as now	Double	3-4 times current	5 times or more	Don't know	Not applicable
(17) One to two years from now	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
(18) Three years from now and later ..	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6

(19) - (24): How satisfied are you with the following characteristics of your current telecommunications service?

	Satisfied	Neutral	Dissatisfied	Not applicable
(19) Speed of operation	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(20) Price of services	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(21) Customer service	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(22) Reliability (system is "up")	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(23) Accessibility (no busy signals)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(24) Your choice of providers (competition)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Current connectivity

(25) How are your computers connected? Check all that apply.

- 1 Locally on a local area network
- 2 Outside to one or more locations (WAN)
- 3 Outside to an Internet Service Provider (ISP)
- 4 Not connected
- 5 Not applicable

(26) - (29): How do you obtain technical support for the following:

	In-house	Contractor	Combination (in-house & contractor)	Not applicable
(26) Local area network (LAN)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(27) Wide area network (WAN)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(28) Applications/software	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(29) Personal computer and operating system	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Part B: Questions for Businesses

(1) - (5): If high-speed connections were available, how likely is it that you would use the following applications?

	High	Neutral	Low
(1) Video conferencing for meetings with other offices of your company	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(2) Video conferencing for meetings with your customers and suppliers	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(3) Education and training delivered via video conferencing or the Web	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(4) Originate educational programs	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(5) Other applications (please list) _____			

(6) - (7): If video conferencing facilities (e.g., room, equipment, connections) were available for your use, how often would you use them if the facility is . . .

	Frequently	Sometimes	Rarely	Never
(6) on your premises	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(7) within the community	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

(8) If high-speed connections were available to employees from home, would your organization allow telecommuting?

- | | |
|--|--------------------------------------|
| <input type="checkbox"/> 1 Already allow | <input type="checkbox"/> 3 Uncertain |
| <input type="checkbox"/> 2 Yes | <input type="checkbox"/> 4 No |

(9) Do you plan to have a Web site over the next two years?

- | | |
|--|--------------------------------------|
| <input type="checkbox"/> 1 Currently have a Web site | <input type="checkbox"/> 3 Uncertain |
| <input type="checkbox"/> 2 Yes | <input type="checkbox"/> 4 No |

(10) - (17): What is the likelihood that your business will use the Web in the following ways in the next two years?

	High	Neutral	Low
(10) Create/maintain a Web site to provide information about company products and services	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(11) Access information (suppliers, competitors, other)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(12) Engage in business-to-business (order & supply) electronic commerce	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(13) Engage in retail electronic commerce (to consumers)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(14) Develop and market new products exclusively via the Internet	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(15) Recruit employees	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(16) Provide technical support and service to customers	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(17) Other (please list) _____			

(18) - (21) If another service provider were to offer telecommunications services (voice, video, data) to your organization, what is the likelihood that you would subscribe with the new provider if . . .

	High	Neutral	Low
(18) the provider offered similar service at current cost, but improved reliability and customer service	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(19) the provider offered higher speed service at 10 percent higher cost	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(20) the provider offered higher speed service at 20 percent higher cost	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(21) the provider packaged voice and high-speed Internet service for 10 to 15 percent higher than your current cost for both	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

Part B: Questions for Educational Institutions

(1) - (5): What is the likelihood that you would use the following applications, if they were available?

	High	Neutral	Low
(1) Delivering or receiving real-time classroom instruction to other buildings within this district	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(2) Delivering or receiving real-time classroom instruction from outside this district	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(3) Allowing real-time access to instruction by students from their homes ...	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(4) Allowing remote instruction using stored video (i.e., "video on demand") .	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(5) Delivering school information via Web page or Internet	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

(6) If you were to provide or receive remote instruction applications, about how many classrooms (or other rooms) would be in use at the same time?

- | | |
|---------------------------------|--|
| <input type="checkbox"/> 1 None | <input type="checkbox"/> 3 Two to five |
| <input type="checkbox"/> 2 One | <input type="checkbox"/> 4 Six or more |

(7) - (10): How often might your staff and students use these resources from their buildings?

	Frequently	Sometimes	Rarely	Never
(7) The library catalog	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(8) Electronic reference material	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(9) Video on specific topics	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(10) Community bulletin board	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

(11) - (15): Which of the following information would you like to make available to parents and students at their home via the Internet?

	Yes	Uncertain	No
(11) Homework	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(12) Grades	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(13) School work	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(14) Library resources (including stored video)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(15) School activities	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

Part B: Questions for Government Offices

(1) - (4): If high-speed connections were available between city, county, education, and other government agencies, what is the likelihood that you would use the following applications?

	High	Neutral	Low
(1) Video conferencing for meetings and hearings	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(2) Originate educational programs	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(3) Education and training delivered via video conferencing or the Web	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(4) Other applications (please list) _____			

(5) - (6): If video conferencing facilities (e.g., room, equipment, connections) were available for your use, how often would you use them if the facility is ...

	Frequently	Sometimes	Rarely	Never
(5) on your premises	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(6) within the community	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(7) If high-speed connections were available to employees from home, would your organization allow telecommuting?		Already allow	Yes	Uncertain
	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

(8) - (16): If citizens were to request electronic services and information, which of the following information or services could your organization provide in an electronic format?

	Currently provide	Could provide	Could not provide	Not applicable
(8) Property and tax records	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(9) Meeting notices, agendas, minutes	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(10) Electronic mail interaction with citizens	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(11) Electronic group discussion/information exchange for special-interest groups (e.g., senior citizens) ..	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(12) Economic development information for businesses	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(13) Maps (GIS, land use, directions, street maps)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(14) Job opportunities in the community	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(15) Rules, regulations and ordinances (e.g., building code)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(16) Other information or services (please list) _____				

(17) Please comment on your access to state and federal databases via the Internet. Check all that apply.

- | | |
|--|---|
| <input type="checkbox"/> 1 Currently using these databases | <input type="checkbox"/> 4 Desired data is not available in electronic format |
| <input type="checkbox"/> 2 Do not desire access to these databases | <input type="checkbox"/> 5 Difficult and cumbersome to access needed data |
| <input type="checkbox"/> 3 Do not know what databases exist | |
| <input type="checkbox"/> 6 Other: _____ | |

(18) - (21) If another service provider were to offer telecommunications services (voice, video, data) to your organization, what is the likelihood that you would subscribe with the new provider if . . .

	High	Neutral	Low
(18) the provider offered similar service at current cost, but improved reliability and customer service	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(19) the provider offered higher speed service at 10 percent higher cost	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(20) the provider offered higher speed service at 20 percent higher cost	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(21) the provider packaged voice and high-speed Internet service for 10 to 15 percent higher than your current cost for both	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

Part B: Questions for Health Care Offices

(1) - (9): If high-speed connections were available, what is the likelihood that you would use the following applications?

	High	Neutral	Low
(1) Video conferencing for meetings with other offices of your organization .	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(2) Video conferencing for patients with health care specialists and institutions elsewhere	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(3) Video conferencing for meetings with suppliers	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(4) On-site education and training via video conferencing or the Web	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(5) Transmission of diagnostic data to remote specialists	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(6) Physician consultation to off-site health care workers	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(7) Information delivery and communication with patients at home	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(8) Originate educational programs	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(9) Other applications (please list) _____			

(10) - (11): If video conferencing facilities (e.g., room, equipment, connections) were available for your use, how often would you use them if the facility is ...

	Frequently	Sometimes	Rarely	Never
(10) on your premises	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
(11) within the community	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

(12) Please comment on your access to state and federal databases via the Internet. Check all that apply.

- | | |
|--|---|
| <input type="checkbox"/> 1 Currently using these databases | <input type="checkbox"/> 4 Desired data is not available in electronic format |
| <input type="checkbox"/> 2 Do not desire access to these databases | <input type="checkbox"/> 5 Difficult and cumbersome to access needed data |
| <input type="checkbox"/> 3 Do not know what databases exist | |
| <input type="checkbox"/> 6 Other: _____ | |

	Already allow	Yes	Uncertain	No
(13) If high-speed connections were available to employees from home, would your organization allow telecommuting?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

(14) Do you plan to have a Web site over the next two years?

- | | |
|--|--------------------------------------|
| <input type="checkbox"/> 1 Currently have a Web site | <input type="checkbox"/> 3 Uncertain |
| <input type="checkbox"/> 2 Yes | <input type="checkbox"/> 4 No |

(15) - (22): What is the likelihood that your organization will use the Web in the following ways in the next two years?

	High	Neutral	Low
(15) Provide health care information	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(16) Create/maintain a Web site to provide information about services	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(17) Schedule appointments	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(18) Access information (suppliers, competitors, other)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(19) Engage in business-to-business (order & supply) electronic commerce ...	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(20) Recruit employees	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(21) Provide technical support and service to customers	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(22) Other (please list) _____			

(23) - (26): If another service provider were to offer telecommunications services (voice, video, data) to your organization, how likely is it that you would subscribe with the new provider if . .

.

	High	Neutral	Low
(23) the provider offered similar service at current cost, but improved reliability and customer service	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(24) the provider offered higher speed service at 10 percent higher cost	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(25) the provider offered higher speed service at 20 percent higher cost	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
(26) the provider packaged voice and high-speed Internet service for 10 to 15 percent higher than your current cost for both	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3