Starting a Telecommunications Plan in Your Community

by Tom Bonnett[1]

Planning for telecommunications infrastructure investment is extremely important to promote economic development in rural communities. Since the passage of the Telecommunications Act of 1996, many billions of dollars have been invested in advanced telecommunications systems to meet the growing demand for higher quality services, broadband[2] capacity, and new services. Most of this private investment has been focused on urban and suburban areas because the telecommunications industry has some confidence that future demand in those areas will justify these investments.

Will rural communities be left behind? Will rural communities be stuck with POTS (Plain Old Telephone Services) while the densely populated areas enjoy PANS (Pretty Amazing New Stuff)?

In the "good, old days" (prior to 1996), a rural community poorly served by its telephone company would appeal to the state public utility commission, and perhaps the business and civic leaders would organize contentious meetings with the phone company until services were improved. Those avenues are still available, of course, but today, telecommunications is becoming more *competitive*, and its various forms are *converging*. The first development means that most consumers will have more choices about providers than they ever had before. It also means that communities can seek a firm other than its incumbent provider for advanced telecommunications services. The term *convergence* describes how different telecommunications providers are beginning to offer a full range of telecommunications services. Cable TV companies now provide telephony and cable modems for data transmission; while the telephone companies are busy installing DSL and, in a few cases, VDSLC, which is capable of transmitting video over copper (Williamson 2000). AT&T, the dominant long-distance carrier since the 1984 divestiture, recently claimed it had gained one million customers for local telephone services, more than half of whom received local telephony through cable systems. Wireless technologies currently transmit all forms of telecommunications, including voice, text, images, data (e.g., access to the Internet), and TV broadcasts.

The rapid advances in information technologies in this digital era require that civic leaders assess community needs, inventory existing infrastructure, project future needs, and choose effective strategies to ensure that these needs are met. This report provides an outline to assist community leaders in developing a telecommunications plan for their rural community. It also discusses some of the more promising strategies currently being used by rural communities to improve their telecommunications infrastructure capacity.

[2]Broadband refers to the transmission via telecommunications of a large volume of data. For example, the FCC (2000) defines advanced telecommunications capability as "infrastructure capable of delivering a speed of 200 kilobits per second (Kbps) in each direction," while the Commission denominates as "'high-speed' those services with over 200 Kbps capability in at least one direction."

Why Start a Community Plan?

We plan before beginning to undertake a task, a project, or an activity when we are not sure we know exactly what we want to achieve or the best way to achieve it. A successful planning process articulates collective goals, identifies objectives, provides effective strategies, and establishes benchmarks that guide progress. The best community plans engage a variety of people, especially major stakeholders, in the process of setting goals and testing various strategies. A community planning process also creates a positive social dynamic—drawing strength and expertise from the community—that is often essential to achieving measurable outcomes.

This planning effort is based on the belief that effective telecommunications services can improve the quality of life in a community. If well used, these services can improve education and health care delivery. They may meet other social objectives as well. Most importantly, quality telecommunications services can help existing firms remain competitive and may help recruit new firms to the community. Achieving both objectives would improve the employment prospects of community residents and enhance the economic prosperity of the community. Advanced telecommunications services may, in the language of economists, be a necessary but not sufficient condition to sustain economic development in rural America. Put bluntly, having these services does not guarantee prosperity, yet, not having them could seriously undermine the economic viability of most rural communities.

Many telecommunications experts are more emphatic on this point. "Nobody will move to your town if you are not connected to the Internet," warns Jamal Le Blanc of the Benton Foundation (Brown 2000, 26). Edwin Parker (2000), a rural telecommunications expert, agrees. He suggests that rural communities not linked to the expanding broadband network will experience the same economic fate as those that were bypassed by the telephone network, the railroad, or the interstate highway system.

The term *digital divide* has been used in recent years to call attention to the fact that some groups have had less access to information technologies than the early adopters, who are well-educated and affluent. More than two-thirds of households earning more than $50,000 have Internet connections (61 percent of households earning between $50,000 and $75,000; and 78 percent for households earning $75,000) (NTIA 2000). A recent NTIA report on this topic found more than half of all American households had a computer, and slightly less than half had Internet access (as of August 2000, 51 percent and 41.5 percent, respectively). According to this survey, the digital divide has diminished slightly in recent years as the cost of computers and communications has declined, and as more Americans at every income level are gaining access to the Internet.

Two important distinctions should be emphasized here. First, the digital divide is not just about having access to the latest hardware device. It is about a willingness to employ digital technologies and develop a new set of skills that will become essential in this emerging knowledge-based economy (Bonnett 2000). A typical worker whose skills include mastery of Microsoft's programs (*Word*, *Excel*, and *PowerPoint*) earns a wage premium in most labor markets today. Second, the digital divide remains a special problem for rural America because of geography, low density, and cultural factors. A smaller percentage of rural households own home computers and have Internet access than the national average. While access is improving for rural residents, their success in taking advantage of the opportunities of an information-based society requires more. For rural residents to successfully bridge the digital divide requires a commitment to improving e-literacy, as well as an understanding of the implications related to technology and telecommunications and of the need to aggregate local demand (Tscheschlok 2001)

Most elected officials representing rural communities are becoming concerned that they are being left behind as digital technologies, and the skills to use them well, are transforming the national economy. After the Federal Communications Commission (FCC) released a report on broadband, FCC Commissioner Gloria Tristani said, "While broadband deployment is occurring in some small cities and rural areas, I am concerned that it may not be happening as quickly or ubiquitously as it should. No single top-down solution is going to work in all rural locations. The solutions need to emerge from local communities themselves with supporting help from state and federal governments" (Wohlbruck and Levy 2000/2001, 5). If Parker's contention is correct—that rural communities connected to the emerging broadband network will have the best chance of sustaining economic viability—then the fate of many rural communities will rest with the ability of their leadership to plan and develop superior telecommunications systems.

Aggregating Demand and Rural Strategies

Aggregating demand has been the most effective strategy to improve telecommunications services in rural communities for the past several decades. It continues to be, although it has become much more complicated after the enactment of the federal Telecommunications Act of 1996. Section 254 of this legislation ensured access to advanced tele-communications services to schools, health care facilities, and libraries. As administered by the FCC, the "E-rate" program provides subsidies to the schools and libraries; a separate fund assists rural health care facilities. Unfortunately, the institutions receiving these special subsidies cannot be included as part of the rural community's aggregate demand for advanced services. The social objectives of Section 254 are laudable, but the effect has been to remove a huge chunk of the aggregate demand for advanced telecommunications services in rural communities. Parker (2000), astutely observes the unfortunate con-sequences when the otherwise highly successful E-rate program helps some schools. In doing so, it becomes less likely that the rest of the community will have their network needs met to sustain economic viability due to deficient aggregate demand.

Despite this institutional obstacle, innovative ways to aggregate community demand for telecommunications services include developing public-private partnerships, forming regional approaches, and leveraging public investment. The following are several examples of recent community strategies to improve telecommunications infrastructure:

1. **Wed Town and Gown.** Any community blessed with a university or college should be interested in how Blacksburg, Virginia became one of the first electronic villages in the world. In a pioneering role, Virginia Polytechnic and State University was an anchor and catalyst in facilitating the broad adoption of online services, especially electronic mail for community communications. Blacksburg has attracted 24 new high-tech firms to its community since 1995, and its community leadership claims its success is largely due to the Blacksburg Electronic Village (BEV). Eighty businesses are part of BEV, through which the cost of connecting to the Internet is $5 per month

per computer (McGarigle 2000). For more information about this example of community networking, visit: <**www.bev.net**>.

Most colleges are making substantial investments in their telecommunications infrastructure so they can provide state-of-the-art services to their students, faculty, and staff. Some colleges, for example, are providing wireless Internet access through a Local Area Network (LAN) for their students on campus.[3] Community leaders should discuss the possibility of forming a partnership with a nearby college that would enable the surrounding communities to share broadband access.

2. **Develop Public-Private Partnerships.** Large firms or institutions could serve as the anchor for new infrastructure investment that would enable surrounding communities to benefit from Internet and broadband access. A cluster of large businesses, hospitals, or social institutions could be enticed to become "anchor tenants" in a regional broadband network. Establishing a public-private partnership with established anchor tenants could lead to the formation of a nonprofit organization to manage the rural broadband network and seek sufficient investment to build it. In 1999, Evanston, Illinois, began a project called E-Tropolis (**www.evanston.lib.il.us/community/technopolis/**), through which it hopes to become a 100 percent wired city (Stuart 2000).

The Keystone Community Network (KCnet) (**www.kcnet.org/**), in central Pennsylvania, is a good example of this nonprofit approach. Formed in 1995 with leadership from the county's school district, KCnet provides Internet access to 3,100 subscribers in addition to its 7,000 students, faculty, and staff. The school district covers 1,000 square miles in an agricultural region that lacks large cities, major universities, and big employers. Those within reach of KCnet's limited but expanding fiber network have broadband Internet access (McGarigle 2000).

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[3]For an explanation of the mechanics, see Daniel Briere and Christine Heckart, *Network World*, February 28, 2000, available at: <**www.nwfusion.com/columnists/2000/0228briere.html**>.

The McDermitt Combined School also acted as an anchor tenant and catalyst to create an important community resource. McDermitt has a population of 756 and is 74 miles from the largest town in northwest Nevada. Three years ago, no one in this tiny community had access to the Internet. There were no Internet Service Providers. An enterprising teacher wanted the school to have Internet access, concluding that the best way to obtain it was via satellite from a California provider. It would cost $1,900 a month—far more than the school could afford—so the teacher and students organized the McDermitt-Humbolt Internet Provider (M-HIP) (**www.m-hip.com/**) as a nonprofit and enticed community users to sign up. They attracted the needed 74 subscribers from the community. Today, the average household pays $25 per month for high-speed access to the Internet, and the school has 124 computers equipped to connect via M-HIP. The public library, local businesses, and the nearby Paiute and Shoshone Indian Reservation are also connected. M-HIP, apparently the only ISP in this country run by high school students, has about 260 subscribers (Salter 2000).

Partnerships on a much smaller scale can be important as well. A school in rural Pennsylvania provided space to an ISP for its modem banks in exchange for the use of a T-1 line for the school computers. A state education official reflected, "It's a win-win situation. Instead of having to pay long-distance access rates, the community gets local dial-up Internet access, and the school gets a free high-speed Internet connection" (McGarigle 2000, 20).

3. **Regional Approach to Aggregating Demand.** Most rural communities lack sufficient demand on their own to justify major telecommunications investment unless they are blessed with nearby firms or established institutions that are willing to serve as anchor tenants in a multipurpose rural network. For this reason, a regional effort to improve telecommunications capacity and services will hold the greatest promise for most rural communities.

In 2000, a nonprofit organization was formed in Washington, Ohio, to provide wireless, broadband communications to the region. A community leader explained that this strategy was pursued because commercial providers of wireless broadband services had excluded this region of the state in

their service plans; therefore, it was left to the community to develop its own local access or risk being left behind. Support came from the local business community. The president of the Marietta Chamber of Commerce said that the service was essential for existing businesses as well as for recruitment of new business (McKay 2000).

4. **Aggregate Community Demand to Convince a Competitive Telecommunications Firm to Provide Advanced Services.** Berkshire Connect (**www.bconnect.org/**) began as an impressive effort by a group of business, cultural, academic, and local economic development leaders in western Massachusetts to find a competitive tele-communications firm to provide enhanced services. Frustrated by the lack of response by the incumbent provider, these community leaders formed Berkshire Connect and, by aggregating regional demand, convinced Global Crossing to install a multimillion dollar backbone to accommodate their needs. Now they can obtain advanced services at rates comparable to those paid in Boston (FCC 2000).

Sometimes, incumbent providers respond quickly to a compelling community needs assessment. Other times, they do not. The Berkshire Connect story is an example of community leaders who aggressively sought competitive partners when the incumbent provider did not respond quickly to their needs.

5. **Leverage Public Resources to Expand Services to Rural Communities.** Some rural communities have been willing to make major infrastructure investments to create or develop broadband networks, which are then leased to private firms that operate them. LaGrange, Georgia, developed a partnership with Charter Communications, the local cable company, to provide online access to the Internet (Government Technology 2000) (**www.lagrange-ga.org/homepage.cfm**). A more prominent example of this strategy is Chicago's CivicNet (**www.chicagocivicnet.net/civicnet/ SilverStream/Pages/civicnet.html**), an effort to build a public-private fiber optic network for its government, businesses, and residents. The city is planning to spend $25 million each year on telecommunications services "on voice and data communications to become an 'anchor tenant' for a high-speed network to be built out by one or more lead technology vendors" (Kontzer 2001).

The municipal government in Orange City, Iowa (**www.orangecitycomm.net/**) formed a partnership with a local telephone company and is building a wireless system to bring high-speed Internet to its residents (FCC 2000).

State dollars can also leverage expanded services to rural communities. Through the Massachusetts Community Network, the state requested bids from all telecommunications providers for T1 services to its many municipal governments and schools. According to the FCC's (2000) broadband report, bidders were "required to offer the same price for T1 service to any customer, regardless of location. . . . The winning contract cut T1 costs in Massachusetts nearly in half, and guaranteed access to T1 services for all towns, villages, and schools in the state." Similarly, Colorado has awarded a state contract to a firm to build a high-speed computer network linking each of its 64 county seats. Bids for that contract were evaluated based on price and the speed with which remote counties would be served. Montana's SUMMITNET project, which connects nine communities, is another example of using public dollars to leverage additional services to rural communities (FCC 2000).

6. **Build Public Telecommunications Systems.** The Manning Municipal Communications and Television Systems Utility in Iowa became a publicly operated telecommunications provider after the city leaders got frustrated with the poor quality of services provided by the incumbent provider (Kotkin 2000). Other examples include Glasgow, Kentucky; Palo Alto, California; and Tacoma, Washington. More than 200 publicly owned utilities in this country currently provide telecommunications services. Included are 109 municipal utilities which provide cable television services; 61 which offer Internet access; 58 which lease fiber to private-sector companies; 32 which provide high-speed data services; 18 which provide local telephone services; and 10 which provide long-distance voice service. Iowa has 30 municipalities that provide facilities-based telecommunications.

Most rural communities will not have the fiscal capacity or local expertise to build their own telecommunications systems. A regional approach or a public partnership with a rural electric cooperative merit further study in some communities.

Rushing into advocacy is an all-too-human tendency. Before we can even define the problem, someone already knows the solution. How is the best solution selected without understanding the problem? Without gathering important information about current telecommunications capacity? Without learning something about the latest satellite and terrestrial wireless technologies? Without carefully and cautiously evaluating all the options?

Community planning should be a deliberative process that enables a group to assess the effectiveness of various strategies. Community planning can be done simply or comprehensively, on the back of an envelope or in multi-volume reports. The following is a structured approach that may be applied to rural community efforts.

Several strategic planning prototypes have succeeded in rural areas. These approaches are roughly similar in content but vary in the number of steps. McMahon and Salant (1999) developed an approach that succeeded in Colorado and Wyoming. They claim that strategic planning for telecommunications can offer many benefits to communities:

- Identifying gaps in existing telecommunications infrastructure by pinpointing problems that limit economic development, service delivery, or quality of life.
- Helping people decide which problems are most important to address first.
- Creating opportunities for partnerships by identifying common interests.
- Building more broad-based support for new tele-communications applications.
- Providing a mechanism to coordinate multiple strategies.

The approach used by McMahon and Salant (1999) in working with two rural groups on telecommunications issues started with a telecommunications needs assessment to take stock of the local telecommunications environment, including basic use by businesses, public agencies, and households as well as the potential demand for additional infrastructure and service. The existing telecommunications infrastructure and services are identified as well. The needs assessment concludes with the financial resources and potential for partnerships if a strategy were to be developed.

The next step in working with local leaders is to identify the priority goals and to help people understand the needs and the potential for what could be accomplished if these goals were met. A direct benefit of this approach is to help telecommunications firms understand both what is needed as well as the local commitment in place to make it happen.

The third, and in many ways, the key part of the exercise is to create an action plan that charts out a course that, if followed, could meet the priority goals for the region and enhance telecommunications services in the areas. This action plan contains several types of strategies and is flexible enough to meet the needs of various area groups.

This model has been successfully applied in two areas: Northeast Wyoming and Morgan County, Colorado. The results show that such a planning process can in fact work in a remote rural area. A more detailed approach is described in the following section.

An Eleven-Step Community Planning Approach

1. **Convene a group that is interested in telecommunications issues** and that is willing to embark upon a community planning process. Ideally, everyone who might benefit from having access to advanced telecommunications services could be asked to participate in this planning process. Realistically, few people will have the time or interest to be actively involved. The challenge is to make the best use of willing participants and available resources to develop an effective community plan. Major employers; institutions such as schools, hospitals, and libraries; and various public agencies should be recruited in this planning process. A process that engages the major stakeholders in the community will be stronger and more likely to achieve its goals.

   Establish a timetable for the effort, and assess the various levels of commitment. Match assignments with ability to deliver. Set realistic expectations for volunteers that are not too low and not too high. In most communities, some people will talk a good game at the first meeting, but lose interest later on or otherwise fail to deliver on their enthusiastic promises.

2. **Develop a common vision** by asking everyone to share their thoughts and ideas about advanced telecommunications services. What do they want today? Why? What do they envision for the future? How could advanced telecommunications services improve their daily lives? These questions help people think about functions. Advanced tele-communications services are not the panacea; rather, they are the means to an end. What are the ends? The group should try to reach consensus on a vision statement that articulates an ideal result.

   Realism should not be allowed to preempt this discussion because a strong vision statement can yield strong, motivating goals and objectives to guide subsequent work. Be sensitive to the nature of this task, however; many practical people get

frustrated with this kind of open-ended discussion. They want to know what the problem is and how to fix it. Discussing an abstract topic wastes their time (or, so they say at the time). Ask the practical participants to patiently allow the dreamers to have their time to share. The pragmatists will have their chance to shine later in the process. From this discussion, the planning group will be able to articulate long-term goals and set specific short-term objectives. For example, the goal of the Cape Cod Connect project in Massachusetts was to obtain data transmission services at a reasonable price for each category of user in every community (O'Connell 2000).

3. **Draft a Community Needs Assessment** that includes an inventory of all current tele-communications users. This product of the planning process can be as modest as a few pages listing all users or a volume the size of a dictionary. If resources permit, the comprehensive approach is to obtain detailed information from the following: government departments and agencies; public works staff and engineers; non-profit organizations, including social services, health care, youth and senior citizen services; educational institutions, both K-12 and postsecondary; businesses, and interested citizens (Herbst, Ladd, Mendoza, Buck, and Moore 1998).

   The questions to be asked are as follows:

   - *What telecommunications services are available now?*

   - *What will be needed in the near future, and why?*

   If resources permit, one way to obtain this information from business owners and the general public is to convene focus groups. If it is likely that existing firms will expand and new firms will be recruited to the community, then certainly that

assessment should be included here as well. The most successful plans have a needs assessment that convinces a telecommunications provider to make a substantial infrastructure investment.

Broadband capacity, for example, is a classic "chicken and egg" problem. The industry will not make it available at affordable prices throughout the community unless future demand can be proven. Until it is broadly available, one can only guess at how strong the demand for it might become (Hurley and Keller 1999). The community needs assessment should be considered as the strongest empirical evidence to justify substantial telecommunications investment in your community.

4. **Assess existing telecommunications capacity** by listing all incumbent providers and new entrants. Ascertain if reliable information can be obtained about telephone switching centers, fiber routes, Points of Presence, long distance carriers, and Internet service providers (Beatty 2001). Ask them about their current investment plans in your community. For example, the FCC (2000) report noted that 96 percent of urban zip codes had at least one broadband provider, while only 40 percent of rural zip codes had access to broadband services in any form. The two most popular means of providing broadband connections are through DSL (Digital Subscriber Line) and cable modems. Each has its advantages; however, DSL is limited to those residing less than 15,000 feet from a central office of a local telephone company, and the cable TV operator must make large investments to enable broadband capacity *to flow in both directions* through the coax-cable system. (The cable TV system was built, initially, to allow the flow of video in just one direction—to the residential consumer.)

Are the incumbent providers making these investments in your community? When do they think broadband capacity will be available? And to whom? Similarly, many experts think that wireless technologies will ultimately provide broadband capacity to most of rural America.[4] Almost unnoticed, a new wireless data networking standard, unmemorably called 802.11b, has gained

ground on more widely touted ways of gaining wireless access to the Internet. University students, company staff, and computer geeks are increasingly using wireless LANs to log on while they are out and about. Companies such as MobileStar and Wayport are installing the necessary equipment in airports, hotel lobbies and sports stadiums. Questions to ask are as follows: Who owns the license in your community to employ MMDS or LMDSC wireless technologies using microwave transmissions, and which of the two can provide two-way data service? Will they provide a timetable for deployment of these services in your community?

5. **Develop a full range of strategies** by listing and discussing possible options. Do not rush to embrace any strategy quickly. The objective in a brainstorming discussion is to list as many options as possible. As a separate exercise, the planning group should develop criteria for ranking these strategic options. The pragmatic criteria should include feasibility, legal issues, time horizon, community resources, and other political factors unique to your community.

6. **Evaluate the most promising strategies** by discussing them with elected officials and other civic leaders. Remember the long-term goals articulated by the group at the beginning of this process. Some strategies may appear to meet the immediate objectives, but may fail to advance the longer-term goals. Rating these strategies against the criteria is a good way to summarize the research and to clarify the relative merits of each strategy as explicitly as possible.

7. **Obtain information about the most promising strategies** by learning more about what rural communities similar to your own have done and are doing. A canvas of national organizations can assist in the task of gaining information about how other communities have acted to improve their telecommunications services. Start with the National Association of Telecom Officers and Advisors (NATOA) (**www.natoa.org/**), the National Association of Counties (NACo) (**www.naco.org/**),

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[4]Hughes Network Systems of Germantown, Maryland, a unit of General Motors, pioneered the field of satellite Internet access with DirectPC, a one-way service that features fast access by satellite into your computer; however, commands and file uploads from your computer go out by phone line. StarBand Communications Inc. of McLean, Virginia, a start-up with backing from Microsoft, offers high-speed two-way direct-satellite Internet access from anywhere in the continental United States. Later this year, Hughes is promising a two-way service similar to StarBand (Langberg 2001).

the National Association of Development Organizations (NADO) Research Foundation (**www.nado.org/**), and Public Technology, Inc. (PTI) (**http://pti.nw.dc.us/**). Have different types and sizes of communities made different strategic choices? Which model offers the most promise for your community? Why?

8. **Begin discussions with various telecommunications providers** by presenting your community needs assessment. Meet with each firm separately, and let each know you are meeting with the others as well. Aggregating demand, as documented in the community needs assessment, is the best, most effective short-term strategy. By demonstrating the current need and estimating future demand for these services, you are trying to convince each of these providers to be the one to make infrastructure investment in your community. Sometimes, asking gets results.

   If these negotiations fail to produce adequate results, reconsider the other major options. Consult again with civic leaders and public officials who often have good ideas about strategic alternatives. Rural communities may wish to pursue public-private partnerships, regional approaches, public investment to leverage private investment, or state policy initiatives.

9. **Remind yourself why you are planning.** The people with access to a computer are more likely to learn how to use it than those without. Residents who have Internet access are more likely to learn how to use it than others. These skills currently have economic value in our society. Learning how to obtain these skills has both economic and social value. A community that cultivates learning by residents of all ages is well-positioned to compete in this new knowledge economy.

   Most children can learn basic computing and communications skills easily, at least easier than the rest of us. As job churning increases (i.e., the loss of old jobs and the gain of new jobs), as skills for higher paying positions change overnight, as new knowledge increases faster than our ability to obtain and master it, a community must be willing to invest in its residents to promote its economic prospects. Any community investment that promotes lifelong learning is a good one. Plans that neglect this human dimension miss,

inadvertently, one of the primary reasons for seeking to improve the quality of telecommunications services.

10. **Gain political support for your action plan.** If your planning effort includes many of the major employers, leaders of social institutions, and elected officials, substantial support for the action plan will be earned through your hard work. A large group usually moves slowly through this process, but the product of this effort, its action agenda, has often gained substantial political support. A small group can move quickly through the community planning process, but often lacks political support throughout the community. That leaves some heavy lifting at the end of the planning process. Before the first meeting is called, the explicit trade-off in this planning choice should be considered. A large group is slow, but gains powerful support for its action plan; a small group can plan quickly, but may fail to attract broad political support.

11. **Form a rural coalition to influence state telecommunications policy.** Key rural telecommunications issues (see text box on page 9) should be closely monitored by community leaders, planners, and rural advocates. *Colorado* provides tax credits to companies that invest in improving Internet access in rural areas and offers grants to help local governments plan strategies for aggregating demand and for linking their communities to the statewide network. *Utah* established a Rural Telecommunications Task Force to study ways to assist the development of advanced telecommunications services. State legislation has been proposed in *Minnesota* that would define the quality standard for telecommunications services to include broadband capacity and which envisions a state universal service fund to subsidize these services in high-cost rural communities.

   Virginia has a program that equalizes the cost of broadband for business and citizens throughout the state. Rural businesses and residents in Virginia are not charged more than urban users for Internet access, as is common in most states. This innovative program, called Net.Work.Virginia (**www.networkvirginia.net**), provides an advanced, broadband network delivering Internet access and ATM (asynchronous transfer mode) service statewide.

The Illinois Century Network "is a telecommunications backbone to provide high speed access to data, video, and audio communication in schools and libraries, at colleges and universities, to public libraries and museums, and for municipal government" (ICN web site 2001). Sixteen states own or are planning to construct their own telecommunications networks, while California is moving in the other direction. It privatized its state-owned telecommunications system in 1998 (Eisenach 2001). Rural advocates should monitor these developments closely. Building a public network or providing targeted subsidies to institutions (such as the e-rate) diminishes the aggregate demand for advanced services within rural communities. Though laudable initiatives, they, sadly, reduce the prospect of attracting more private-sector investment in rural communities telecommunications infrastructure.

Parker (2000) makes the important argument that in many rural communities the combined government demand is a substantial share of the demand for data networking services. Those networks do serious economic harm to these communities because the government demand is met by a dedicated network. This network is not accessible to local businesses and residents, meaning the remaining community demand is insufficient to make the investment in a separate data network economically viable. If those government networks were virtual private networks instead of physically private networks, then similar services could be made available to rural businesses and residents who could use it to improve their rural economy. Government networks should be the anchor tenant in multipurpose rural broadband networks, not the spoiler that makes it impossible to have a network at all.

Key Rural Telecommunications Issues

1. *The outlook for rural, high-speed data*

   Are advances in telecommunications creating a digital divide or building a digital bridge between urban and rural America?

2. *The effect of e-commerce on the rural economy*

   Will e-commerce help rural enterprises to thrive, or will they fall victim to new methods of bypassing the middle man?

3. *Government support for telemedicine and distance learning*

   Is rural America receiving its share, and are these subsidies going to the rural areas most in need?

4. *The growth of competition*

   Competition brings innovation, cost-based prices, and customer choices. Will rural America enjoy the same competitive benefits as urban residents?

5. *Alternative technologies such as wireless*

   Will satellites and microwave replace wires? (Staihr 2000)

Planning Is Iterative

Many planners place too much emphasis on the word, *plan*, as a noun, and much too little on this important word as an action verb, as in *to plan*. Many of us have made heroic efforts to produce a planning document, which sometimes gets its moment in the public spotlight before it joins the others on the shelf gathering dust. This fate is to be avoided.

Community planning is not like following a cooking recipe that gives step-by-step instructions (see summary in text box at right). Good planning is a dynamic, iterative process; it is not linear or sequential. A community plan that lacks political support is missing something. Revisit the initial steps in this process periodically to ensure that the effort has sufficient information, careful analysis, and adequate community participation. Have the initial goals and objectives changed during the planning process? Does new information about another community's approach make that option more appealing? Good planners must constantly monitor political developments, and they must seek reliable information about the activities of other communities.

Another reason that planning (as an active verb) is superior to a static document (plan as a noun) relates to the rapid pace of technological change. Digital *this* replaces analog *that* overnight. Compression of data increases the carrying capacity of copper lines. Feasible options, such as wireless from satellites and fixed locations, may be the most promising telecommunications strategy for your community. Plus, they could develop much sooner than most of us think,

although they certainly were not viable a few years ago when the last community telecommunications plan was cast in bronze. Reflecting on the D Day Invasion in 1944, General Eisenhower, said, "Plans are nothing, yet planning is everything."

A Community Planning Approach Summarized

1. Convene a group that is interested in telecommunications issues.
2. Develop a common vision.
3. Draft a Community Needs Assessment.
4. Assess existing telecommunications capacity.
5. Develop a full range of strategies.
6. Evaluate the most promising strategies.
7. Obtain more information about them.
8. Begin discussions with various providers.
9. Remind yourselves why you are planning.
10. Gain political support for your action plan.
11. Form a rural coalition to influence state telecommunications policy.

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Illinois Institute for Rural Affairs
Stipes Hall 518
Western Illinois University
1 University Circle
Macomb, IL 61455-1390