

## Part 2: Applications Development

Version 1.1

Latest Revision: January 2003

Potential applications for your NCIH facility are limited only by your imagination. Regardless of their nature, their development is a collaborative process in which sound preparation, good organization, and effective cooperation are the keys to success. Ideally, this process should begin long before programs are scheduled to start.

### 2A. Collaborative Planning

**2A-1.** Information technology transcends traditional concepts of boundaries and service regions, enabling people who are doing similar kinds of jobs to reach out to one another regardless of where they are physically located. Whether you intend to interact across the city or across the state, the key to program development is maintaining successful partnerships, a task that entails the ability to *think* regionally and to *act* collaboratively.

**2A-2. Organizing Your Institution.** In all likelihood, your agency has never had prior experience with teleconferencing. The implementation of your NCIH connection may well represent a systemic change in the way it conducts business. To achieve maximum potential, the concept of video conferencing must be thoroughly integrated into your institutional mission statement and technology plan, while the usage of the facility itself must be properly incorporated into your administrative structure.

A vision begins with a definition of goals and objectives. Is your principal intention to make your assets available to a wider audience? To access external resources? To leverage them within your system? To improve productivity and reduce expenses? Your purpose should be concisely defined, aligned with your institutional self-image and existing goals. It should be understood by all employees.

Effective institutional management is more than the appointment of support personnel. It is important to make certain that the various levels of your administration are supportive as well. Although procedures will differ, the normal impulse in most bureaucracies will be to form a committee to exercise oversight, provide advice, and channel communications.

**2A-3.** A well-structured committee can greatly increase the efficiency of your initiative. Depending on the size and nature of your agency, it might include the site manager, one or more members of the user community, a facilitator or technician, and a representative from the CEO's office. Its duties may be either managerial or advisory. Common functions include soliciting and coordinating applications, training institutional users, working with partners and client groups, generating information, and charting a course for operational improvements. Since good public relations are fundamental both

within and outside your agency, minutes of the committee should be widely distributed to keep everyone informed of your progress. To publicize programs more extensively, consider establishing a newsletter.

**2A-4.** Most of the people who use your facility will not be technical experts and may have only occasional contact with the equipment. If they are not properly empowered, they cannot use this resource to best advantage and may even resist doing so. The planning process affords a good opportunity to bring technical and non-technical staff together for brainstorming. Planners should remember that the technology itself is only a tool. Emphasis should always be placed on the innovative ways in which video technology can be used and the many new opportunities it will create.

**2A-5. Creating Partnerships.** Like the technology itself, the concept of partnering may be unprecedented for your agency. You may be planning to join a well-developed community of interest that has already created programs in which you can participate. But if you do not initially have collaborators, a variety of tools are available for finding them. Lists of sites and contact numbers are provided on the NCIH Home Page. Institutions similar in purpose to your own are a good potential source for application sharing.

The NCIH **List Serve** is the resource most often utilized by sites seeking or advertising programs. The BellSouth interactive **Web Scheduler** accepts queries by subject, site, county, or time frame. Details for accessing these resources are described elsewhere. The **swap shop** is also a concept that has been employed with considerable success to promote interaction. Video sessions have been presented for this purpose in the educational community at both the high school and community college levels. They have been organized either by geographic location or by interest group.

Perhaps the best device for benefiting end users is the **regional client group**. Such organizations are particularly useful while sites are under construction and during the early phases of applications development. After a facility has become operational, the group is a useful mechanism for sharing ongoing information among support personnel. Your NCIH regional coordinator can put you in touch with the nearest association. If a client group does not exist in your region or service sector, consider forming one.

**2A-6.** The model for all NCIH client groups is the Cape Fear Regional Partnership Network (CFRPN), originally founded in Southeastern North Carolina to support the Vision Carolina Project (1991-1994). CFRPN now includes more than 20 institutional and associate members, with representation from public agencies, the private sector, integrators, and service providers. Meetings are held quarterly. Over the years, the consortium has adapted to new challenges. Its current functions include:

- Facilitating applications and promoting activities and partnerships.
- Disseminating information of professional interest to distance learning personnel from the local, state, and national levels.

- Representing regional interests at NCIH Connectivity Council meetings or other stakeholder events.
- Extending collective expertise throughout the service region. Under the leadership of the Division for Public Service at the University of North Carolina at Wilmington, the consortium has assumed a significant technology outreach effort, including the extension of NCIH connectivity to rural sites in Pender, Brunswick, Columbus, Bladen, and Duplin Counties. As new sites join the network, they in turn provide the benefit of their knowledge to their neighbors, repeating the process.
- Furthering resources through grant applications. Since 1993, CFRPN members have received technology grants totaling nearly three-quarters of a million dollars through the Rural Utilities Service of the U.S. Department of Agriculture.

**2A-7. Realizing the Value of Partnering.** As the CFRPN experience illustrates, collaborative relationships are crucial for extending resources through grant funding. Most major grant sources, particularly those that advertise nationally, require applicants to document eligibility through joint planning, activities designed to promote common ends, technical innovation, feasibility, budgetary support, and community involvement. Without allies, no institution can reasonably hope to compete on this playing field.

Cooperation is also vital when special agreements among institutions are necessary for program delivery. Depending on the application, this process may be quite simple or extremely complicated. Sometimes, only a handshake between leaders is needed. In fields such as education, the presentation of high-school or college-level courses might involve multiple school systems, service regions, or levels of the academic system. Questions of reciprocity, accreditation, and academic credit could also be concerned. Huskins Act legislation can make such courses advantageous for both originating and receiving sites. Planning for this kind of offering is best conducted within the context of an inter-institutional or regional client group.

**2A-8.** When building effective collaborations, a “win-win” approach is unquestionably the best tactic to adopt. During the planning process, each partner should ask itself what benefit it can bring to the table. For example, if you want to participate in someone else’s program, an offer to exchange an application of comparable content, drawing upon your own agency’s strengths, would be a productive *quid pro quo*. Novice sites frequently take advantage of existing resources in the early stages of their program development, then return the favor as they gain experience and confidence.

**2A-9.** It is important to remember that creation of a successful video conferencing initiative is a complex, time-consuming task requiring patience and strong leadership. You should not expect to use your facility full-time in the initial stages of development. Expectations that are too ambitious too soon could result in reversals that will delay achievement of long-term goals. Agencies should set realistic objectives for building programs, then carefully cultivate the qualities that will determine their ultimate success.

## **2B. Program Delivery**

**2B-1.** Quality video conferencing is a team effort. Operation and maintenance of the network requires specialized expertise, much of which occurs behind the scene. Working with audiences at distant sites requires logistical support from other agencies. It cannot be stressed enough that the ideal strategy for success is cooperation throughout the planning, delivery, and assessment stages of an application. Many of the practical hurdles that might otherwise stand in the way of productive conferences can be anticipated and addressed in advance through good organization.

**2B-2. Taking Responsibility.** In any program involving multiple sites or complex logistics, the potential exists for divided accountability. There should be clear understandings regarding the assignment of support personnel and the extent of their duties. Among the issues that may need to be clarified are marketing and publicity; registration procedures; and the ordering, distribution, and transmission of materials. People not directly involved in the program may need to be kept in the loop, as for example in the case of security officers, custodial personnel, or others who might be affected by sessions, especially if they take place outside of regular business hours.

**2B-3. Costs of Operation.** If there are expenses associated with your program, the financial aspect should be carefully calculated and allocated by prior agreement. Some costs, such as long-distance telephone or fax transmission, may be hidden but nevertheless substantial, especially if continuous exchange of materials is required. It may also be necessary to modify standard operating practices that are inappropriate. During one early network application, a course being taught from a university to a high school generated negative publicity because the students at the school were charged a university activity fee, despite the fact that they were not physically present on campus.

It is permissible for your institution to charge a fee for the use of its NCIH facility. This amount should be designed to recover costs rather than to generate a profit. Practices in this regard vary across the network. Many agencies do not charge at all. Others charge outside users, but do not assess a fee internally. Still others employ a sliding scale depending on the public or non-public status of the client. A policy applicable to your facility may already exist if your agency frequently makes space available to the public. If not, it may be desirable to create one.

**2B-4. Scheduling Issues.** Problems associated with the coordination of schedules are among the most complicated that planners may face. Such issues are particularly relevant to educational institutions, where the difficulties range from daily bell schedules to semester breaks. Every institution involved in recurring programs needs to assess such complications. The observance of holidays, for example, is not always uniform. Some agencies take Good Friday off, others are closed on Easter Monday. Veterans

Day may be taken as part of the Christmas vacation instead of being observed in November. Exception dates, such as teacher work days, also need to be identified.

Closely related to scheduling is the question of how to handle unexpected cancellations. Presenters or other key personnel may become ill. Fire drills sometimes interrupt sessions. Equipment failure may temporarily prevent a site from connecting. Adverse weather conditions may close down an institution in one part of the state completely, yet have no impact at all on sites in other regions. Such situations may last for days.

There is no single solution to issues of this sort. Flexibility, open-mindedness, and mutual trust are probably the most important attributes needed to resolve them. As an example of the use of creative thinking, one school system created a “zero period” before the start of the official school day so that interactive classes could be coordinated successfully. Alternative arrangements can be made to address known exception dates or incompatible scheduling elements. Although all contingencies cannot be anticipated, an effective “Plan B,” created well in advance, will minimize their impact.

**2B-5. Confidentiality.** Depending on the application, confidentiality issues may arise. The NCIH uses digital technology and dedicated transport facilities that are reasonably secure against unauthorized technical access. The presence of facilitators or other support personnel could be disturbing at a video session that is personal in nature. To avoid embarrassment or the possibility of infringing on a participant’s privacy, the potential for such difficulties should be evaluated and a policy created if necessary.

**2B-6. Copyright.** Transmission of multi-media materials over the network may create copyright issues, especially in connection with films and other commercial ventures. Many legal questions associated with the information age have yet to be resolved. Planners should familiarize themselves with the limits of fair and permissible use as currently defined by international copyright law. If permission for the use of a particular resource is needed, sufficient lead time should be allowed to acquire it.

**2B-7. Room Operators and Their Duties.** NCIH facilities are required to fill two job responsibilities, a *site manager* and one or more *facilitators*. Generally speaking, the duties of the site manager are planning and scheduling video programs, training users within the agency, and representing the institution on committees and work groups. The facilitator is responsible for running the facility during video conferences.

Each agency is responsible for allocating these responsibilities within its administrative structure. Solutions vary from institution to institution. Some organizations separate the two positions; others combine them. The preferred model is for a facilitator to be available for each video session. However, in many agencies, the facilitator functions as a technical or troubleshooting resource and presenters are trained to run sessions. Regardless of how the tasks are divided up, the operators of the facility must be qualified to perform certain basic duties during video sessions:

- **Connecting to the Network.** The Web Scheduler sets up your video sessions and creates their parameters. Depending on the specifications of your codec system, you may have to connect manually to the network at the beginning of each session and disconnect at the end of it.
- **Switching Cameras.** Many facilities have more than one camera. Operators must be able to send the appropriate signal and to adjust camera angles to focus on the participants. The principles of good presentation are discussed more fully in Part 3.
- **Operating Peripherals.** Many agencies have installed video cassette recorders or other specialized multi-media equipment in their facilities. The appropriate use of such peripherals can greatly expand the functionality of your site.
- **Providing Session Support.** A variety of services may be necessary to keep sessions running smoothly. Materials may need to be collected, distributed, or faxed to different sites while the conference is in progress. After it is over, the facility may need to be straightened up or prepared for the next client. Proper arrangements for session support will prevent the waste of valuable network time.
- **Keeping Records.** Operators should keep a session log for institutional reporting purposes and for documenting troubles. Any format may be used. The log should be updated regularly.

If two or more individuals are working in concert, teamwork is essential. Presenters as well as technicians can add to the effectiveness of the interactive experience. An awareness of each others' requirements will contribute to the quality of the program. Individuals who present as well as facilitate must be thoroughly acquainted with the software and with the layout of the facility.

**2B-8. Troubleshooting.** As is the case with any technology, problems may develop in the course of operation. The goal of successful troubleshooting is to restore your facility to functionality as quickly as possible. Personnel with site responsibilities should be familiar with the procedures outlined on the NCIH Home Page or published in the manual *Troubleshooting Your North Carolina Information Highway Site*.

During video sessions, operators should have the following information available:

- Contact numbers for the individual(s) most familiar with the technical operation of the facility and the scheduling of the session. It is advisable to have a backup for each area, especially if the session is held at a time other than regular business hours.
- Contact numbers for each site with which you are interacting, the ITS Customer Support Center, your maintenance provider, and your NCIH regional coordinator.
- A record of the Session ID number generated during scheduling. This number may be found on the Web Scheduler.

**2B-9.** Briefly summarized, the troubleshooting process has three stages: (1) When trouble occurs, operators should conduct the basic systems check outlined in the sources mentioned above to see whether the problem is easily resolvable. (2) If it is not, isolation procedures should be employed to try to narrow down the source. (3) If the trouble persists, network support resources should be contacted for assistance.

**2B-10.** The ITS *Customer Support Center* in Raleigh operates 24 hours a day, seven days a week, and is trained to address NCIH questions. It should be called to report technical problems that have not been resolved by the basic check of your system. The center will assist operators to identify the problem and, if necessary, will refer it to the appropriate resource for solution. You may reach the center at **1-800-441-5296** or locally (within area code 919) at 981-5382.

When a trouble is phoned into the center, an agent assigns a trouble ticket. If the problem is local, your agency's site manager will be contacted periodically to learn what progress has been made to solve it. If the trouble is evaluated as the responsibility of ITS or a network service provider, it will be followed up through the relevant channels. A trouble ticket is not closed until the customer agrees that the problem is cleared.

## **2C. Evaluation**

**2C-1.** Good programs do not end with the conclusion of the video session. Ongoing evaluation of your applications is essential both to assess their value to your institution and to establish benchmarks for future development. We recommend that you develop assessment procedures on both an institutional and individual level.

**2C-2.** While the process will vary from agency to agency, institutional evaluation should be tied directly to your mission statement, institutional goals and objectives, and technology plan. Your institution may be accredited by outside organizations and thus subject to external review and assessment. The state requires accountability for its technology initiatives and periodically studies the results. In designing your procedures, keep in mind the many requirements they may have to meet.

**2C-3.** Common elements in any evaluation process include current status, numbers, outcomes, costs, benefits, problems encountered, and recommendations. Appropriate figures should be readily available for programs as well as technical operations. Some agencies justify their functions quantitatively; others (especially educational institutions) focus on values that are more intangible. Group and individual "success stories" contribute to the perception of value received. Remember that many of the cost savings realized through the use of information technology are indirect in nature and may benefit the end users rather than the organization itself. From both an operational and budgetary perspective, it is also a good idea to have a clear sense of future direction.

**2C-4.** As in any educational or training experience, presenters will want feedback from participants to judge the success of their efforts. If your institution does not have a formal evaluation program for this purpose, we recommend that you create one. Both ongoing and summative evaluations are useful for this purpose.

***Ongoing Evaluation.*** Ongoing evaluation occurs while the program is taking place and allows immediate response to problems that may arise or to suggestions that might improve the quality of delivery. Take a few minutes at the start or finish of the presentation to address participant concerns. Make it clear that you actively solicit input and value the result. You should have several mechanisms in place, including a work telephone number, fax number, web page, or e-mail address to be contacted off-line. Let people know the best (and worst) times to get in touch.

***Summative Evaluation.*** A summative evaluation is a formal process, usually written, conducted at the conclusion of a program to assess its overall effectiveness and to provide a baseline for revisions or future course design. It is usually completed anonymously by the participants. Depending on the agency's procedures, it may first be made available to administrative officials before being provided to the presenter. If any form of grading or accrediting is part of the program, the evaluation should be administered after the completion of all requirements. The results should be withheld from the instructor until the final grades have been assigned.

**2C-5.** Many institutions have created and approved a standard evaluation procedure as part of their training or educational mission. Since the interactive facility adds new elements to the equation – multiple sites, wider diversity of participants, innovative technology – it may be desirable to modify the traditional process and its goals. When creating an evaluation, consider including questions such as the following:

- List three strengths and three weaknesses of the program.
- If you were teaching this program, what would you have done differently?
- What did you think would be covered in this program that was not?
- Were handouts and supporting materials made available on a timely basis?
- Were graphics and visual materials presented effectively?
- Were you able to contact the instructor whenever you needed to?
- Would you recommend this program to a friend? Why or why not?

It is often helpful to assemble some demographic information about your audience, such as age, gender, occupation, or level of educational experience. However, be sensitive to the issues of privacy and anonymity. If you have any questions about confidentiality, consult your superiors in advance.