

**U.S. DEPARTMENT OF COMMERCE
National Telecommunications & Information Administration**

Evaluation of the
Telecommunications and Information Infrastructure Assistance Program

Case Study Report

**Charlotte's Web
94022**

Charlotte, North Carolina

Site Visitors: Joan Michie and John Lockwood

Dates of Visit: December 18-19, 1997

PREFACE

On behalf of the National Telecommunications and Information (NTIA), I am pleased to share the following report that is one of a series of case studies conducted on grants awarded by the Telecommunications and Information Infrastructure Assistance Program (TIIAP) in 1994 and 1995. The case studies are part of the program's evaluation effort designed to gain knowledge about the effects and lessons of TIIAP-funded projects. NTIA contracted Westat, a research and consulting firm, to perform an independent evaluation of the program's first two years of grants. The evaluation consisted of a mail survey of 206 grant recipient organizations and in-depth case studies of selected projects. In February, 1999, the Commerce Department released Westat's evaluation report.

The projects selected for the case studies cover a broad range of program types and sizes, planning grants as well as demonstration grants, and they show varying degrees of implementation, sustainability, and replication. Westat selected the projects to represent a cross-section of all projects funded in the program's first two years. Specific selection criteria included geographic region, target population, project application area, project category, and size of award. To conduct each case study, Westat reviewed all project files, including progress reports and the final report, and conducted site visits. The site visits consisted of project demonstrations and interviews with project staff, representatives of partner organizations, and project end users.

NTIA thanks the case study participants for their time and their willingness to share not only their successes but their difficulties, too. Most of all, we applaud their pioneering efforts to bring the benefits of advanced telecommunications and information technologies to communities in need. We are excited about the case studies and lessons they contain. It is through the dissemination of these lessons that we extend the benefits of TIIAP-funded projects nationwide.

We hope you find this case study report valuable and encourage you to read other TIIAP case studies. You may obtain additional case studies and other TIIAP publications, including the final Westat evaluation report, through the NTIA web site (www.ntia.doc.gov)_or by calling the TIIAP_office at (202) 482-2048. We also are interested in your feedback. If you have comments on this case study or suggestions on how TIIAP can better provide information on the results and lessons of its grants, please contact Francine E. Jefferson, Ph.D. at (202) 482-2048 or by email at fjefferson@ntia.doc.gov.

Larry Irving
Assistant Secretary for Communications and Information

TIIAP CASE STUDY

Charlotte's Web

“How I feel about Community Networking: This is the dawn of a new communications medium that has tremendous potential. The potential is for everyone to become an information ‘sharer,’ not just an information consumer. This does not replace other media, but has its own interactive capability that gives it unique uses. Its power to help the shut in, the shut out and the left out is tremendous. Its power to help revitalize government and reinvigorate economic development is unmatched by traditional media. Its power to extend education, information and communication opportunities is unparalleled. It also is not a panacea; it is not a replacement for human, face-to-face contact, but a supplement to it; it is not a replacement for spoken conversation, but an enabler of it; it is not a replacement for any social, political or cultural endeavor, but a potential enhancer of each.”

Executive Director
Charlotte's Web
From his web page biography

A. EXECUTIVE SUMMARY

At the time of application to TIIAP, Charlotte's Web was just in the process of incorporating. It had no staff, but it had a group of people committed to the concept of developing a community network in the Charlotte/Mecklenburg, North Carolina area. The two TIIAP grants it received (in FY 1994 and FY 1995) were largely responsible for the tremendous growth that Charlotte's Web has experienced. It established an extensive infrastructure and network of services, providing citizens and school children free access to information and educational resources as well as free electronic mail and web space for nonprofit and community organizations. More than 10,000 citizens had Charlotte's Web user accounts at the time that the TIIAP project ended. Special efforts have been made to reach out to the disadvantaged by providing over 200 public access computers and by giving computer training to community leaders in impoverished neighborhoods. Charlotte's Web developed an inexpensive touch screen as well as mini-hubs, which enable several computers to share one modem and telephone, thus driving down the costs of multiple connections. The Charlotte's Web website is very attractive and user friendly. At the time of the site visit, 13,000 pages were on line, and most of this content had been produced by volunteers. More than 2,000 area residents were trained by Charlotte's Web during the two years of the TIIAP projects.

Ownership of Charlotte's Web has been the biggest problem encountered. The project was housed in the public library, which also served as the fiscal agent for the TIIAP grant. Individuals associated with Charlotte's Web considered it to be a separate entity, which had been given space and fiscal assistance by one of its partners, the library. Final resolution of this controversy came with the establishment of a separate nonprofit organization. A lesson learned through this experience was that it is very important to develop written agreements with partners and to clearly define roles and responsibilities. The executive director emphasized another lesson learned: the hardest problems are not the technical ones but the political and human problems. Financing is a problem with which Charlotte's Web was struggling at the time of the site visit, and fees had been established for some services.

B. OVERVIEW

Purpose and General Approach

The purpose of the Charlotte's Web project was presented as follows in the FY 1994 TIIAP application:

“The mission of Charlotte's Web is to create a self-sustaining electronic community that guarantees equitable access through public terminals and on-going training; to promote academic excellence and enhance learning; to serve as a catalyst for economic development; and to create a new means for citizens to engage their government, their communities and each other. The Web has four specific objectives:

1. To connect community institutions and individuals to local, state, national and global information and services.
2. To provide free and convenient access to the network to all members of the community regardless of race, sex, age, disabilities, economic or educational status.
3. To interconnect area educational institutions, especially public schools; to enable training and planning for teachers, learning for students and resource sharing at all levels.
4. To develop a dynamic networking model for other communities to emulate.”

In FY 1994, Charlotte's Web received a TIIAP grant that focused on Mecklenburg County, North Carolina. A second TIIAP grant in FY 1995 expanded services to four surrounding counties.

The entire Charlotte/Mecklenburg area is the primary target group for Charlotte's Web. However, it is expanding its services to neighboring counties. Ultimately, Charlotte's Web fosters communication on a worldwide basis. It maintains data on the number of data requests by country.

Charlotte's Web has a commitment to empower all people in the local area. Groups specifically targeted include minorities, physically and economically disadvantaged, and rural people. To reach out to these groups, Charlotte's Web has placed public access terminals in locations such as the public library branches, parks and recreation centers, homeless shelters, and community centers. The executive director calls this his missionary work.

Description of Grant Recipient and Project Partners

Grant Recipient. The grant recipient was the Public Library of Charlotte and Mecklenburg/Charlotte's Web. During the operation of the TIIAP project it was unclear if Charlotte's Web and the library were one or two entities. The issue flared up as the TIIAP grant was about to expire. The situation is described below in section D.

In the first year, the project had three staff members: the project director (who was the executive director of Charlotte's Web), volunteer coordinator, and system administrator. Two additional staff, hardware manager and office manager, were added in the second year. Volunteers have had a role in the operation of Charlotte's Web (see section D). Since the TIIAP project ended, the original volunteer coordinator has left and a new one has been hired. The position of system administrator was vacant at the time of the site visit.

Project Partners. The major project partner was the Charlotte-Mecklenburg Schools, with 82,000 students in 120 schools. It used TIIAP money to hire a full-time information systems trainer and install lines; equipment purchased by the schools was the major source of matching funds. Another partner was Central Piedmont Community College, with 15,800 students on four campuses. It received \$50,000 for equipment as a part of the TIIAP grant. This equipment enhanced teaching of interactive media. Also, Charlotte's Web helped them develop their website.

The other partners played only minor roles on the project. WTVI, the community-owned PBS-affiliate reaching 13 counties, provided some technology information and aired a 30-minute program about Charlotte's Web. Johnson C. Smith University, a historically black university with 1,400 students, received less than \$10,000 under TIIAP. It used the money to purchase and install enhancements to equipment it already had. Southern Bell helped to wire up the schools. Other partners listed in the first year were 1) City of Charlotte, Mecklenburg County, and local governments in the surrounding area; 2) University of North Carolina at Charlotte with 16,000 students; 3) Time-Warner Cable; and 4) Vision Cable. Partners added in the second year were Discovery Place (a local science museum), and the Regional AIDS Consortium. Most partners developed websites on Charlotte's Web.

Project Costs

Total project cost:

FY 1994 – \$1,240,000

FY 1995 - \$1,280,889

Federal contribution:

FY 1994 – \$450,000

FY 1995 - \$500,000

The main sources of matching money for TIIAP were the Charlotte-Mecklenburg Schools and the Public Library of Charlotte and Mecklenburg County.

C. PROJECT CONTEXT

Community Description

In 1995, the population of Mecklenburg County was 581,466; about 78 percent of whom lived in the City of Charlotte. The racial composition of the county was 70.6 percent white, 27.0 percent black, and 2.4 percent other. The area has a strong economy with a low unemployment rate of 3.6 percent. Almost 14,000 new jobs were created in 1994. According to *Fortune* magazine the area ranks number one in the nation for having a "pro business" attitude. The area has become an airline hub and financial center. Microsoft has a large office in the area.

Status of Telecommunications/Information Infrastructure Environment Prior to the TIIAP Project

(See next section.)

D. PROJECT IMPLEMENTATION

Activities/Milestones That Occurred Prior to the TIIAP Grant Period

The Charlotte's Web executive director was the moving force behind the TIIAP project. In January 1993, when the idea for the community network was conceived, he was the arts editor at the *Charlotte Observer*, the local newspaper. One of his responsibilities was operating the bulletin board. He obtained an Internet account and stumbled across the Peoria Freenet, which he alone saw as the wave of the future. He wrote some stories in the newspaper and started to get phone calls and e-mail messages, and eventually a core of people who wanted to do something more was established.

The future executive director began looking for project partners. The library was very interested and lent a computer and four (later five) telephone lines to the effort, which went online on June 17, 1994. The local community college also wanted to be involved, but the city government and the Charlotte branch of the University of North Carolina initially were not interested. A local system with basic information, which eventually became known as Charlotte's Web, was created. It was not connected to the Internet at that time, but dialing up to the Internet was shown in demonstrations of the system. Indeed, the future executive director had a flair for creating demonstrations that generated much publicity. He also was able to use his connection with the paper to advertise events. Thus, much interest about the system was created in the community.

Those involved with Charlotte's Web began applying for grants. Ideas generated for the various grant applications became part of the TIIAP project. For example, the system applied for a Corporation for Public Broadcasting grant, which they did not get. However, in the process the local public television station became a partner. In applying for a \$25,000 grant to the National Library of Medicine to create access to AIDS/HIV information resources, the partners realized that volunteers could do much of the work. Volunteers thus became a major component of Charlotte's Web. (Charlotte's Web also received the grant from the National Library of Medicine and conducted the project from October 1, 1994, through March 31, 1996, at the same time that the TIIAP project was underway.)

The future executive director learned about TIIAP from the Internet. He discovered that the local school system was planning to apply as well. Since it was unlikely that TIIAP would fund both projects, Charlotte's Web and the schools decided to become partners.

Activities/Milestones That Occurred During the TIIAP Grant Period

Once the TIIAP contract was awarded, one of the first steps taken was hiring an executive director for Charlotte's Web, who would also serve as the TIIAP project director. The newspaper editor who was largely responsible for developing the concept of Charlotte's Web and for writing the grant was persuaded to serve in that capacity. He is a real visionary who is astute at seeing opportunities and moving on them. Consequently, the project took off in a variety of directions.

In the application it was assumed that the activities would be Gopher based. However, when the project began in early 1995, the executive director had seen the World Wide Web and said, "That's where we're going." This decision had implications for many project activities. It impacted how information would be put on the system and how the system would be used. It also meant that HTML would be used in formatting. Since most information is put on Charlotte's Web by volunteers, training in each of these areas had to be given to the volunteers.

Trying to manage the unexpectedly large number of volunteers was a challenge. In the second quarter of the project, they developed six volunteer working groups:

- Content group – provided file uploading and file management functions for data on the web;
- HTML group – handled Hypertext Markup Language coding for the web pages;
- Technical group – tested and inventoried donated equipment and configured and installed mini-hub networks;
- WebTrain group – developed training materials;
- Publicity group – developed publicity strategies including planning public events and developing publicity materials; and
- General volunteers – performed a variety of office, clerical, and computer-related tasks.

Volunteers created most of the pages on the Charlotte's Web website. At the time of the close-out report, these numbered 8,000 pages. Each major section of the website was the responsibility of a volunteer Webmaster.

The project had to do more educating than expected. This included making people aware of the World Wide Web and its value. In early 1995, when the project was getting off the ground, 15 percent of the community had modems and 10 percent were on line.

The major mechanism for informing direct end users about services was and continues to be through Charlotte's Web itself. Most of the information on Charlotte's Web is entered by volunteers who receive free training in how to do this task.

To reach people who were unfamiliar with computers, Charlotte's Web staff made presentations at clubs and organizations such as the Lions' Club and the Charlotte Jaycees. It also participated in numerous community events, such as SpringFest, an outdoor arts festival. Charlotte's Web also trained volunteers so that they can help others on some of the public access terminals.

It established a program called the Electronic Neighborhood for impoverished neighborhoods. After neighborhood leaders received 9 hours of computer training, they were given refurbished computers and printers so they could act as information brokers in their neighborhoods. They spent time on line each day and helped people in their neighborhood find out about job openings or set up appointments. By the end of the TIIAP project, 30 neighborhood leaders had participated.

New activities developed as the project progressed, and the executive director made the most of these opportunities. For example, a civic action project was done with the Education Foundation, a privately funded foundation in Mecklenburg County focusing on educational reform. In this project, information about the restructuring of the school board elections process and about school board candidates was provided on Charlotte's Web.

In another elections project described in the close-out report, "Charlotte's Web collaborated with the local elections office to provide the nation's first local elections results via the Internet, delivered in 'real time' to citizens at the very instant they were tallied in the Elections office. At the same time, Charlotte's Web provided a 'neutral' conduit for all of the tabulated results for local, statewide and national media outlets."

In an example from the business world, Charlotte's Web put the Land Development Standards Manual for the Charlotte region on line. This has helped developers keep up to date with requirements in this rapidly growing region of the country. It was done at no additional cost to government or the developers.

In a final example, a newspaper reporter was hired to study the region and write a series of articles about the community. Central Carolinas Choices grew out of the article. Choices is a regional 14-county collaborative that includes parts of both North and South Carolina. The purposes of the organization are to build new regional leaders, to build an electronic network, to conduct an annual regional benchmarking and assessment, and ultimately, to facilitate a process to engage citizens in building a shared regional vision. Charlotte's Web was highly promoted in the reporter's article; he saw it as a connector in the community. On the strength of the articles, Charlotte's Web was invited to be a part of Choices.

Steps Taken to Sustain Project Activities Beyond the TIIAP Grant Period

A number of problems arose when Charlotte's Web and the Public Library of Charlotte began to seek funding to sustain project activities. The problems occurred in the larger context of project ownership. They are described below in the section on problems.

One avenue that Charlotte's Web explored for additional funding was to apply for FY 1996 TIIAP funding. However, the proposal was not successful.

Activities/Milestones That Occurred Following the TIIAP Grant Period

Many of the activities done during the grant period continued after the grant period was over. The Charlotte's Web database currently contains about 900 volunteers, about 500 of whom are actively involved. About 25 volunteers are trained each month on how to create web pages. Charlotte's Web has about 14 Webmasters, each responsible for a major section of the website; all Webmasters are volunteers. Information to be entered on the Web is always verified by a volunteer before it is posted. Charlotte's Web now has about 13,000 pages on its website. Interest is maintained because the Internet continues to grow. It is still new to many people. "Their eyes open and their brain lights up," commented the current coordinator of volunteers.

Charlotte's Web continues to provide maintenance services for the public access terminals. However, this position was vacant at the time of the site visit. Two of the public access terminals visited while on site, which were at the Mecklenburg Aquatic Center and the Transit Center, were not working. However, neither site had contacted Charlotte's Web to inform them of the problem. Staff at the Aquatic Center stated that the terminal received heavy use.

Two current projects involve work with law enforcement. One, with the Council of Governments, enables police chiefs, particularly those in the rural counties outside of Charlotte, to use private e-mail communication. The other project was funded by the U.S. Department of Justice and is being done in partnership with the Charlotte-Mecklenburg Police Department and the University of North Carolina at Charlotte. It will establish a statewide community policing institute that will provide training with credit value. It will be especially helpful for rural areas so staff will not have to travel for training. Materials will be password protected.

The executive director calls the provision of equipment to the disadvantaged his “missionary work.” Through a nonfederal grant, he is able to continue this effort. If the equipment costs less than listed in the grant proposal, Charlotte’s Web is able to keep the difference. They also receive a considerable amount of equipment from donations. Most of the testing of this equipment is done by volunteers. An effort is made to refurbish as much of the equipment as possible so it can be placed in the community.

Charlotte’s Web has also begun a program called “adopt-a-site” by which companies provide tutoring and support volunteers at a mini-hub site, initially for 1 year. This idea lost momentum when the former volunteer coordinator left. Currently, one insurance company has adopted a public housing site. The executive director is trying to cluster volunteers, for example, all volunteers who work in the same company. As a group they may adopt a site.

A lesson learned by the executive director since the TIIAP project ended is “to be entrepreneurial means business. Nonprofits have to learn to make money.” Charlotte’s Web is service oriented, but it costs \$22,000 per month to operate. He needs to bring in \$1,500 per day. Businesses want to give in-kind contributions, but the organization needs money. Charlotte’s Web has had to move from being a project into being a business. The executive director is learning to think like a businessman. During the grant, he was able to participate in everything.

Financing is a problem, and the executive director talks about it openly. There is a fee now for some services. He is trying to move to a cooperative stance such that those who pay for services have a partnership in the enterprise. He wants to make them more than stakeholders. In its 1997-98 business plan, Charlotte’s Web lists 34 partners.

According to the executive director, almost none of the community networks has achieved sustainability, unless they have a special relationship with a funding source. The executive director wants to develop a model for sustainability. He is currently working on pricing the various services provided and putting this information on the Web; he is not comfortable with being secretive. One board member is concerned about posting the information because competitors might undercut them.

The executive director was the major force in the development of the Association for Community Networking. He now serves on the board of this association, which was formally launched in October 1997 in Aspen, CO. He called the members the “post grant generation.” The issues that they are addressing include creating and training a board. A key issue is meeting fiscal obligations, and some clients may need to be charged for some services. As a result, more attention must be given to the paying customer, whereas in the past everyone was equal. The executive director suggested at Aspen that 50 percent of the budget should come from grants and 50 percent through fees.

Issues

Because of developments in technology, some of the project activities were different from what was envisioned at the time of the proposal, but these changes were not considered problems. The most important one of these was the use of the World Wide Web rather than a Gopher-based system. Technology development also enabled the project to develop a low-cost touch-screen kiosk. In addition, instead of hooking up individual computers, the project maintained a collection of networks.

At the George Shinn Uptown Shelter, a facility for homeless men, a mini-hub has been established with five networked 286 PCs. It was decided to provide only a text-based system at this site to eliminate

the possibility of accessing explicit graphic pornography. However, this also means that other graphic information is not available. So far, this has not presented a problem.

Problems

Ownership of Charlotte's Web was the biggest problem encountered. The project was housed in the public library, which also served as the fiscal agent for the TIIAP grant. Yet, individuals associated with Charlotte's Web, especially the executive director, considered it to be a separate entity, which had been given space and fiscal assistance by one of its partners, the library.

The library considered Charlotte's Web to be their project. The equipment used to operate Charlotte's Web came from the library, which provided \$100,000 toward the match. The library director suggested that the library may have been guilty in that it "didn't make it clear who owned what and what the outcome would be." The grant was written very quickly. When Charlotte's Web received TIIAP funding it went from a small activity to half a million dollars. According to the library director, they almost had too much money too fast. He suggested that check points along the way were needed. Everyone was rushing around to get things done. In the process, no one thought to consider who runs the project or who owns the logo.

The problem came to a head as the TIIAP grant was about to expire. Additional money would be needed to keep Charlotte's Web going. The library director thought that the activities were getting beyond the library's scope in that it was providing access in counties outside the library's service area, although this was one of the original goals of the project. Consequently, the library director proposed an approach that would continue the library's involvement, but at a reduced level of \$250,000 per year.

Then, the county manager proposed to move Charlotte's Web into the county's data processing unit. This move was viewed by Charlotte's Web staff and volunteers as an attempt by the county to take control of Charlotte's Web. Information about the county's actions was posted on the Web. The community rallied together so that this would not happen. Thousands of e-mail messages were sent to the county manager from all over the world in addition to the local community. There was concern about the ownership of the information on the Web, especially on sensitive topics such as AIDS/HIV resources. Once the county government had gotten involved, the public library bowed out. Since the county had the money, the library would have lost Charlotte's Web no matter what happened. (About 85-90 percent of the library's money comes from the county, although legally it is a nonprofit agency.)

The controversy was very high profile and lasted a number of months. Final resolution occurred 6 months after the TIIAP project ended. Charlotte's Web moved out of the library, a step which one respondent called "The Divorce." It is now a nonprofit organization called Charlotte's Web Community Network, housed in space donated by a bank. The location is one block away from the library, which technically leased the equipment and the logo to Charlotte's Web for \$1 for 30 years. To publicize the change, about 100 volunteers lined up in a "bucket brigade" to move the equipment from the library to the new space. With independence, Charlotte's Web has been able to have a more diverse board.

Problems in the partnership between the library and the public schools arose during the negotiations for the TIIAP grant. Some last minute budget cutting was necessary, so the library deleted some of the sections involving the schools without consulting them. The schools were to get approximately \$37,000 out of a \$450,000 grant, yet the school system was providing most of the matching money. According to the Charlotte's Web executive director, the schools were ready to walk out of the project. Eventually, the budget was revised and the schools received \$143,000 in the first year.

With encouragement from the executive director, the schools stayed in for the second year of the project. In the second year they received almost half of the \$500,000 budget.

Early in the project, the schools had some difficulty working out connectivity between the Macintosh and Windows worlds and with overall systems integration. However, interoperability has not been a big problem for the project.

E. PROJECT ACCOMPLISHMENTS AND IMPACT

According to the executive director, Charlotte's Web was treated like one of the "crown jewels of TIIAP." Yet he said, "We were just doing what we said we would do in the proposal. We delivered pretty well."

The executive director sees Charlotte's Web as a gateway to information that is reliable, easy to use, up to date, and annotated to links of quality. He said that "every community needs that role fulfilled somewhere." He also commented that, "The philosophy of a community network is that everybody has something to offer. The network allows people to share it. Each person has value which is shared over the network. Over time you see an aggregated value, a community value." Community ownership of Charlotte's Web has been fostered by the extensive use of volunteers.

Charlotte's Web was a highly successful project that established an extensive infrastructure and network of services in the Charlotte/Mecklenburg area. It provides citizens and school children free access to information and educational resources, as well as free electronic mail and free web space for nonprofit and community organizations. More than 10,000 citizens had Charlotte's Web user accounts at the time that the TIIAP project ended. Several different types of access were developed: stand-alone workstations in locations such as senior centers, recreation centers, and urban library branches; library-based networks, especially in rural counties; mini-hub-based networks in community centers, halfway houses, and homeless shelters; touch-screen kiosks for unsupervised locations; and rural points of presence that allow local-number dialup for residents in rural counties.

Providing access to the information superhighway for all citizens is an important part of Charlotte's Web's vision. It has made special efforts to reach out to the disadvantaged. This has been accomplished by providing over 200 public access computers in the four-county region. In addition to public schools and libraries, Charlotte's Web has placed computers in places that provide services to disadvantaged individuals such as public housing projects, community centers in the poorer sections of town, homeless shelters, and a transitional home for women. Also, community leaders in impoverished neighborhoods are receiving computer training so they can serve as information brokers, but also, in some cases, provide training in the use of the computer.

Charlotte's Web developed mini-hubs, which enable several computers to share one modem and telephone, thus driving down the costs of multiple connections. Requests for the mini-hub software have come from all over the world. Charlotte's Web also developed an inexpensive touch screen. It costs about \$5,000 compared to \$35,000 systems in use at the time. Free Unix and software from Europe were used in its development. Information about the touch screen is provided on Charlotte's Web for free.

The project put the touch-screen kiosks in very public sites such as the main bus terminal and parks and recreation centers. The executive director explained that they considered the project to be an experiment, to try things out rather than just do the safe things. If something such as the kiosks failed, you would still learn something. If it worked, it was a successful demonstration.

The Charlotte's Web website is very attractive and user friendly. All content is checked for accuracy. When the TIIAP project ended, Charlotte's Web contained an impressive 8,000 pages of local and regional information. At the time of the site visit, the amount of content online had expanded to 13,000 pages. Most of this content has been produced by volunteers. Nonprofit and small government agencies as well as community groups are given free space on the Web. Although links to business are created, Charlotte's Web does not host commercial businesses on its website. Its approach is to "let users vote with their mouse" in choosing which websites to visit.

During the 2 years of the TIIAP projects, Charlotte's Web trained more than 2,000 area residents. Some of these people later started their own businesses as a result of the skills learned through training.

As a result of all the presentations, demonstrations, workshops, and training activities conducted by Charlotte's Web throughout the region, the community now has "one of the most electronically literate populations in the nation." (The U.S. Postal Service used Charlotte as a pilot site for some new electronic services. Charlotte was selected because public access was in place already.)

According to the close-out report, "In grants alone, Charlotte's Web has been a key partner in generating more than \$5.5 million in outside dollars to the region. This has leveraged spending on a regional level of more than \$8 million, making for a total direct dollar benefit to the region of more than \$13.5 million."

Impact of the Project on Grant Recipients and Project Partners

Grant Recipients. At the time of application to TIIAP, Charlotte's Web was just in the process of incorporating. It had no staff, but it had a group of people committed to the concept. Equipment to operate it was provided by the public library. The two TIIAP grants were largely responsible for the tremendous growth that Charlotte's Web has experienced. The grants also helped to leverage much additional money.

Charlotte's Web has won both national and local awards. These include:

- Public Technology Inc. National Achievement Award, 1995
- National Association of County Commissioners, 1996
- North Carolina Association of County Commissioners, 1996
- Charlotte Chamber Blue Diamond Award, 1996
- NII/GII community award, 1996-97
- Mothers Against Drunk Driving Award, Charlotte Chapter, 1997 (after the TIIAP project ended)

Public Library of Charlotte and Mecklenburg. According to the library director, the TIIAP project "pushed us ahead in new technology and the Internet. It was the best thing that ever happened to stimulate growth technically for both the schools and the library. Even though Charlotte's Web moved out, it left a lot." The library now has its own Webmaster and 700-800 pages on the web. A graphic artist has been hired to create the web pages and the Webmaster does all the links. The library has a full-time trainer just for library staff. The library has its own server and backup server. An intranet for staff will

become operational in January 1998. About 30,000 people per month access the library's website and 20,000 per month physically come into the library to use the website. The library system currently has 300 computers and 100 more are on order. The importance of installing fast lines was learned from Charlotte's Web. "Charlotte's Web has been a valuable stimulus." It enabled the library to see the possibilities. In addition, in 1995, the public library received a National Association of Counties Award for Charlotte's Web, and a major reason that Gale Research Company selected the library for its Library of the Year award was Charlotte's Web.

Project on the Partners. The public schools used the TIIAP money to hire a trainer and to install lines. The grant also paid for the monthly connectivity charges. The Director of Information and Library Services from the school system said that they "would be no where near where we are today" without the TIIAP grant. The Charlotte/Mecklenburg Schools are way ahead of other school systems. Three years ago they were using text-based access; they didn't know about the World Wide Web. TIIAP provided the seed money to build the whole infrastructure and has generated more money because it showed why information resources were critical. In a short time they were able to connect many schools. About 100 sites are now on the WAN, about 50 sites are left to do. (This rapidly growing district now has about 140 schools.) The other schools will be connected in a few months. The district has picked up the salary of the trainer, who was originally funded through TIIAP. The district now has about 20,000 computers. Each classroom has four to six computers and others are located in the libraries and labs. The Director of Information and Library Services is now on the board of Charlotte's Web.

The schools have applied for a U.S. Department of Education Challenge Grant. Charlotte's Web was not involved because the application occurred in the midst of the dispute with the library, but they are collaborating now.

The other project partners played only a small part in the TIIAP project. The project director thought it was somewhat misleading to have the public TV station and Bell South listed as partners, since their role was nominal. Charlotte's Web still provides connectivity for the public television station, which now pays for the service. Bell South, which was wiring the schools, was not doing anything different as a result of the grant. According to the project director, "At every step along the way, the phone company is a closet adversary."

As an outgrowth of TIIAP, relations between Central Piedmont Community College and Charlotte's Web were established. They have just received a grant to develop GED training materials which will be put on the Web.

City government now has their information on their own servers.

F. EVALUATION AND DISSEMINATION

Evaluation

In the TIIAP proposal, Charlotte's Web linked their evaluation to the four project objectives shown in section B as follows:

- Objective 1. Analyzing the number of sites connected and statistics on use.
- Objective 2. Collecting and analyzing user profile data.
- Objective 3. Analyzing site connections, interlibrary loan statistics, and school surveys.

Objective 4. Tracking queries from other networking initiatives nationwide and studying their development.

Data actually collected differed somewhat from what was proposed. A major reason for the difference was the switch to a web-based system. The data collected were as follows:

- Number of schools connected: 78 by the end of the project.
- Number of community access terminals: 200 in 4 counties by the end of the project.
- Number of logins per day: 1,300 (local dial-in access only) by the end of the project; this is more than the number of logins per month at the beginning of the project.
- Number of registered users who receive free electronic mail and free access to the Web and the Internet: more than 10,000 by the end of the project.
- Number of pages on Charlotte's Web: 8,000 by the end of the project.
- Number of requests for files on the website each day: more than 80,000 by the end of the project.
- Number of volunteer hours: more than 20,000 hours in 1996, which was worth a total of more than \$600,000.

The total 1996 volume on the website was 9,743,229 hits, an average of 811,935 per month, 187,370 per week, or 26,693 per day. Charlotte's Web also has received hundreds of testimonials from users and these have contributed to the development of the system.

Although Charlotte's Web does collect a considerable amount of data, the executive director admits that "we've done a terrible job documenting in numerical terms the success [of the Charlotte's Web] or the outcomes of use." For example, the job listings section is very comprehensive and the most used section of the system. But, they have only anecdotal evidence of jobs obtained from the listings.

In addition, some people have gotten jobs or changed careers as a result of training that they received through Charlotte's Web, but this has not been tracked. Anecdotes include a man in his mid-30s who had never been able to stay in a job for more than 6 months. Another person has become the Webmaster for USDA.

Time is a problem. According to the executive director, if he reviewed the comments section he could get some representation of what the value of Charlotte's Web would be, but he does not have time to do this. In the past, the executive director replied to every posted comment.

Dissemination

The primary dissemination mechanism is Charlotte's Web itself. With 13,000 pages, Charlotte's Web provides a wealth of information. The executive director feels strongly about providing information free of charge. Consequently, information about the mini-hubs and the low-cost touchscreen has been made available.

During the first year of the project, more than 100 information requests were received from communities all over the world. In the second year, there were hundreds of additional requests. These consisted of telephone calls or “more than casual e-mail.” About 45-50 percent were from libraries. Common questions were: What is the relationship between the community network and the library? How much does it cost? How do you do community networking? How do you get volunteers to help you? The questions are about the same today. However, there is an increase in the number of questions about money.

Charlotte’s Web has served as a model for other projects. By the time of the TIIAP close-out report, it had already assisted dozens of additional networks.

As was mentioned in a previous section, project staff have made numerous presentations and demonstrations about Charlotte’s Web. A newsletter, *The Current Spin*, is also produced by Charlotte’s Web. These activities and products provide an additional means of disseminating information about the project and community networking.

G. LESSONS LEARNED

The close-out report for the Charlotte’s Web TIIAP project contains 30 lessons learned. These can be summarized and grouped into five major themes: role definition, the importance of collaboration, preparation for changes, project operations, and sustainability.

Lessons learned under the theme of role definition were:

- Develop a written agreement with partners in which roles and relationships are clearly defined is very important.
- Be aware of your core mission and what you can and cannot do.
- Be conservative in making promises about what you can do, but try to deliver more than you have promised.
- The limits as well as the strengths of telecommunications must be understood.

The importance of collaboration was the theme of several lessons learned by Charlotte’s Web:

- Begin to work with those who are ready to collaborate. Those who initially said “No” may later change their minds.
- Collaboration must be done intentionally and cautiously with a clear understanding of each organization’s role and commitment.
- Turn to others in the networking community for help often.

Lessons learned around the theme of preparation for changes were:

- Think ahead about what the uses of new technologies might be and begin to use them early.
- Be bold and take risks; learn from your mistakes.
- Start small and make it better.
- Listen to users.
- Seek criticism; it will make your network better.
- Be open to unexpected opportunities.

Some of the lessons learned centered on project operations:

- Make everything as simple as possible for users.
- Generate media coverage to build community awareness.
- Cultivate loyal volunteers and give them authority to act within clear limits.
- Don't wait for everything to be just right. Do something.
- It takes at least twice as long as you think to achieve any electronic goal.

Sustainability is the theme of the following lessons learned:

- Develop sustainability features from the beginning.
- Independent networks can reach out more, but support is harder to sustain.
- Avoid being captive of specific interests.

At the time of the site visit, the executive director emphasized the following lesson learned, "The hardest problems are not the technical ones but the political and human problems." The other lesson learned that he emphasized was that nonprofits have to learn to make money. This was discussed in section D.

The executive director mentioned several other lessons learned. For example, he miscalculated the amount of staff he would need. His model was the Freenets, which were done through universities. In the second year, he hired two additional people, but this still was not enough. He would like to hire three more people now.

In addition, the executive director admitted that he did not bring partners together on a regular basis to keep them on a level basis. He stated, "We could have done better sustaining partnerships." He is doing this in a current grant involving police training.

H. FUTURE PLANS

The executive director of Charlotte's Web is constantly looking for new directions in which to grow. For example, at the time of the site visit, he was working with Central Carolinas Choices on a grant application to a foundation that would expand the electronic infrastructure across the 14-county region.

A grant from the Benton Foundation has been received to put artists on line. The plan is to set up a website for artists to market their work. Initially all the artists will be from Mecklenburg County, but eventually a three- or four-county region will be included in the database. The Arts and Science Council is about to become a partner in this activity.

Charlotte's Web does no commercial business. The executive director sends corporations to other companies. However, he is considering doing a microentrepreneurial enterprise, primarily to learn.

Other ideas for the future include:

- Merging community databases, which will produce added value and change the way people are able to live. For example, Charlotte's Web is working on having a map showing the location of day care and merging it with the city bus route. This will help parents and caregivers in the selection of day care;
- Conducting commerce, such as selling theater tickets over the Web;
- Integrating media, using video, TV, and the Web. Producing TV shows that incorporate the Web;
- Having a photojournalist, writer, and video person all cover the same event. Each would then show the event from their own perspective on line; and
- Working on accessibility issues, but the executive director is quick to point out that the current location of Charlotte's Web's office/training area is not accessible.