

PHOENIXNET: UNIVERSAL ACCESS AND EQUITY OF SERVICE PROJECT NARRATIVE

EXECUTIVE SUMMARY

PhoenixNet, an initiative to provide broad electronic services and information to citizens, was awarded a 1994 TIIAP grant to establish a technical infrastructure and develop initial online services. Access to PhoenixNet will be expanded to reach three specific target groups: elderly, disabled and economically disadvantaged citizens. Senior centers, community centers, libraries and non-profit special needs centers and organizations dispersed throughout the City will be equipped with PhoenixNet workstations to reduce disparity of access to the targeted groups. Several workstations will be equipped with assistive technologies to meet the special needs of disabled citizens and training programs will be specially designed to involve participation from the targeted groups. Virtually every Phoenix citizen, regardless of economic status, age or physical ability, will have access to PhoenixNet.

PROBLEM DEFINITION

All individuals need information to participate fully in society. As technology advances, more and more service providers are offering electronic access to information and services, thus creating an Information Superhighway. Electronic access most often represents an increased advantage to those individuals able to participate and a definite disadvantage to those who are not. Unfortunately, several individuals are often left behind in this revolution due to economic disadvantages, physical disabilities or lack of exposure and training.

In 1994, the City of Phoenix was awarded a TIIAP grant to begin the implementation of an Electronic Community Access Model (ECAM) which is described in detail on page 10. ECAM is designed to provide citizens broad access to electronic information and services through PhoenixNet, the City's telecommunications infrastructure, and the national information infrastructure. Due to a reduction in the funding awarded, citizen access was limited to public access workstations located at two city facilities and dial-up access from the home or office. Only one workstation with assistive technology was funded.

In order to eliminate the disparity of access to the services offered on PhoenixNet and the national information infrastructure, it is critical that special attention be paid to reaching under-served individuals in the City. Three such target populations have been identified in the City of Phoenix: elderly, disabled and economically disadvantaged citizens. Three major factors result in a disparity in access for the individuals who comprise this collective group:

Inability to purchase the necessary equipment. Many citizens cannot afford to purchase their own personal computers, modems and communication software required for information access. Disabled individuals are burdened even further with an additional financial outlay for expensive assistive technologies.

Limited access to transportation. Physical disabilities and limited financial resources seriously impact an individual's mobility, and, as a result, limit one's ability to get to distant public access workstations.

Limited access to exposure and training. Many under-served individuals require special training to use technology that is completely foreign to their current experience. Individuals with physical disabilities not only require training in service applications, but also require training in the use of assistive technologies designed to meet their individual needs.

CRITICALITY OF NEED AND HOW IT RELATES TO TIAP

The criticality of the need to eliminate the disparity in access to the collective population targeted in this project can be easily summarized by quoting from letters of support received by the City of Phoenix for this project:

"The inability to access information and resources available to these populations often results in their inability to gain independence and competence in their personal lives. There are many causes for the discrepancies in service provision, but the most critical is that traditional services have not kept abreast of changes in society and technology. In the supposed 'age of information' all too often the inability of the disabled and elderly to gain access to information has resulted in an even greater disadvantage." (James LaMay, Executive Director, Arizona Center for the Blind and Visually Impaired, Inc.)

"The Computer has become a necessary part of daily life, and yet for many seniors there is little opportunity for them to learn, let alone use the computer to enrich their lives. Some of them are even afraid of touching a computer. This lack of computer literacy further isolates the seniors from the mainstream of life." (Mary Tang, Chairperson of the Chines Senior Center Advisory Board)

"On many occasions, visually impaired individuals experience difficulties in obtaining access to print materials and the central governmental entities which produce them including: economic development, community networking/databases, health issues, arts and culture, public safety and library systems. (Mark Nelson, Director, Technology Center, The Foundation for Blind Children)

"The Americans with Disabilities Act (ADA) is frequently viewed as overwhelming, difficult, and costly to implement rather than an opportunity to do the right thing. The ADA mandates equal opportunities and access to the mainstream of American life. The focus should be on the larger goal of providing access to information for people with disabilities in the best possible way for the user, rather than focusing on compliance with the law. The goal is really to help individuals with disabilities find the information they need to participate fully in the larger society." (Cindi Holt, City of Phoenix Special Needs Center)

As the national information infrastructure proliferates, it is critical that all individuals have access. It will be the responsibility of local governments to ensure universal access and equity in service. The City of Phoenix recognized this responsibility and specifically acknowledged it in the City's Information Superhighway Policy adopted by City Council in 1994. (Refer to page 14 for a copy of the City of Phoenix Information Superhighway Policy.) PhoenixNet clearly represents an extension of the national information infrastructure to the citizens of Phoenix. By expanding PhoenixNet in the following manner, disparity in access for elderly, disabled and economically disadvantaged citizens in the City of Phoenix will be eliminated:

- ▶ **Provide free access to public workstations located throughout the City.** Transportation requirements will be minimized by placing workstation within three miles of most city neighborhoods. There will be no fee associated with using public access workstations.
- ▶ **Offer assistive technologies at several public workstations.** Workstation equipped with assistive technologies will be strategically placed in City facilities and special needs centers and organizations frequented by disabled citizens. Not only does this reduce the need for additional travel, but it also serves as an effective method of reaching out to the targeted populations. Specific assistive technologies will be selected based on the needs of the clientele at each location.
- ▶ **Develop hands-on training and outreach programs.** Professionals trained and experienced in working directly with the targeted populations will develop training programs designed to reach out

and involve the targeted populations. The "Train the trainer" model will be used to solicit involvement from citizen volunteers from the targeted groups. In several facilities, training will be presented as recreational activity, increasing the outreach.

- ▶ **Launch a publicity campaign specifically designed to reach target populations.** Public Information professionals have developed a publicity campaign using existing City publications and production capabilities as well as media with circulation to target populations. More detail is presented in the Communication Plan located on page 15.

Once again the benefits of funding the proposed extension of PhoenixNet can be best demonstrated by quotations from the letters of support received for this project:

"This expansion will reduce the economic barriers to information and welcome all Phoenix residents into the 21st century better prepared to participate in their community, locally and globally." (Susan Webb, Executive Director, Arizona Bridge to Independent Living)

"The proposal to equip senior centers, community centers and libraries located in disadvantaged neighborhoods and with assistance available to them for community access will make a very real difference in the equalization of opportunity. Individuals regardless of disability, age, or economic status will be provided with greater opportunity to enhance their independence, dignity and self-worth." (James LaMay, Executive Director, Arizona Center for the Blind and Visually Impaired, Inc.)

"PhoenixNet is a sound and necessary means of providing access to city functions and services. It proposes to move the point of access into the community thereby bringing the services closer to those who are more likely to experience difficulty in getting to a centralized location further from their home. Modifying PhoenixNet [workstations] with adaptive technology for the blind and visually impaired goes the extra mile in that it makes the difference between having and not having access at all. Doing so will break down the barriers for these individuals by producing standard computer text in alternative formats." (Mark Nelson, Director, Technology Center, The Foundation for Blind Children)

CITY OF PHOENIX'S APPROACH TO ADDRESSING THE PROBLEM

The City has developed a strategic plan and long term commitment to implementing PhoenixNet. The PhoenixNet Strategic Implementation Plan, as presented on page 17, assumes several phases, each building upon the other to reach the long-term objectives established in the City of Phoenix Information Superhighway Policy. Careful planning went into the strategic plan to ensure that each phase of work represents an integral building block to the larger overall goal, but also demonstrates immediate value. Resources have been committed to the first three phases of the plan, and work is well underway.

In order to ensure universal access and equity in service to PhoenixNet, this project has been developed in the context of the overall strategic plan utilizing the following approach:

Place public access workstations in specially selected facilities within three miles of virtually every city neighborhood.

Strategic location is essential. Transportation is a major issue in the lives of many persons with disabilities, senior citizens and economically disadvantaged individuals. If a service or workstation is not located in a spot easily accessible by public transportation, it will not be well used. It is also not enough to simply know buses are nearby, but important to know where the stop is and what path someone using a wheelchair or traveling with a white cane will take. Equipment may be available and comply with the ADA, but there must

be a commitment on the part of the service provider to facilitate access. Each of the sites selected for assistive technology is known to be easily accessible via public transportation for disabled citizens. In addition, care was given to select geographically dispersed sites most frequently utilized by targeted populations and close to their neighborhoods.

Utilize existing PhoenixNet telecommunication infrastructures and citywide technology standards to ensure economic use of resources, interoperability and scalability.

One of the major objectives of the PhoenixNet Strategic Plan is to implement concepts that can grow with open technology yet support the many applications and associated hardware that exist within the City. This concept is not only vital to Phoenix, but is also consistent with the realities of the various technologies that exist today in support of many local, county, state, and federal institutions. The City has developed a ten-year Information Technology Architecture Vision which was designed to reach consensus with the various disparate data centers with a coordinated, technology-based direction. This vision is centered around moving to "open" based hardware and software, recognizing that fully open technologies have not fully materialized.

Over the past five years, Phoenix has built fiber optic cable connectivity among downtown municipal buildings and microwave connectivity for City-owned telephone switch and public safety radio sites. The City of Phoenix network uses current technologies, open architectures and makes use of existing infrastructure, where possible. The network uses City-owned fiber and microwave circuits plus leased circuits from private sector providers. The data backbone is Ethernet over City-owned fiber and leased Transparent LAN Service, T-1, or Frame Relay from US West. The network transmission protocols include TCP/IP and IPX/SPX. The standards for networking among dissimilar systems is routed TCP/IP. The routers are also employed as security "fire walls." The City has established an Internet connection over a T-1 connection through Arizona State University.

To date, PhoenixNet has provided connectivity among City offices to support voice, data, and video transmission for City activities. By the end of this Summer, two city facilities will be linked in for citizen access, and by early 1996, citizen dial-up access will be implemented utilizing 1994 TIIAP grant funding. When funding is awarded for the 1995 TIIAP grant, Phoenix will expand existing PhoenixNet capabilities to provide citizen access at 25 new facilities citywide according to the Project Timeline presented on Page 20.

Frame Relay digital service offerings from US West, our local commercial provider, were chosen as the most cost-effective solution for connecting the selected public access sites. These services can be expanded as additional bandwidth is needed, do not build duplicate networks, and provide the necessary network maintenance. Ongoing operation is assured because the selected locations are permanent City facilities with high citizen traffic and the technologies chosen are accepted, proven, and consistent with nationwide standards. For more detail on the PhoenixNet network design proposed for this project, refer to the diagrams on pages 21 - 22.

The City has also developed plans which address transitions that will provide for growth and increased bandwidth. PhoenixNet will be transitioned from TCP/IP to OSI standards when appropriate. The infrastructure will support switching technology, the LAN concentrators will support "fast ethernet" upgrades, and the City will move to Sonet and ATM technologies, when available, required, and cost-effective. The City of Phoenix is obtaining dark fiber from competitive access providers who are building local loops. This will provide a future source of affordable, high capacity bandwidth. If needed in the future, the Frame Relay circuits requested in this grant will be upgraded to T-1 circuits.

Implement the appropriate combination of assistive technologies in locations frequented by disabled citizens and staffed with professionals trained in meeting the special needs of these individuals.

Assistive Technology is the term used to describe a wide range of devices that make it possible for people with disabilities to accomplish the various tasks of daily life. When this term is used in the context of computers it refers to modifications that make it possible for people with disabilities to use a computer with the same degree of independence as people without disabilities. The City of Phoenix, with the assistance from the Technical Center Director of the Foundation for Blind Children, carefully selected the appropriate assistive technologies for various sites throughout the City based on the needs of the users at each site. Assistive technologies were selected with standards in mind to ensure compatibility among them and the capability for future upgrades. Staff professionals from the partner organizations and Phoenix's Special Needs Center have experience with most of the choices and working relationships with the selected vendors. For details on the Assistive Technologies selected refer to the Assistive Technology Equipment By Site list on Page 23.

CITY OF PHOENIX AND PARTNERS QUALIFICATIONS

The City of Phoenix has a well known reputation for successfully managing innovative approaches to delivering public services. In 1995, the City was named "Best Managed City in the Nation" by *Financial World* magazine, which stated, "The city was fine-tuning its approach to sophisticated technology while other cities were still wondering if they should make the shift to electric typewriters." In 1993, Phoenix was selected as a co-winner of international Carl Bertelsmann Prize for "The Best Run City in the World". The award was given by the Bertelsmann Foundation, the research and philanthropic arm of Bertelsmann AG, one of the largest media organizations in the world. To qualify, Phoenix had been previously selected as the most efficiently operated U.S. City by representatives of the National League of Cities, National Civic League and the International City/County Managers Association.

The City of Phoenix has carefully restructured the management model for Citywide computer and information services over the past five years. The revised model has been effective in meeting goals on time and in achieving a high degree of interdepartmental cooperation and rapid change. This project represents a cooperative initiative among the City of Phoenix Information Technology Department; Parks, Recreation and Library Department; Human Services Department; and the Public Library's Special Needs Center. In addition, very crucial partnerships have been established with three non-profit special needs organizations serving disabled citizens: Arizona Center for Blind and Visually Impaired, Inc., Arizona Bridge to Independent Living, and The Foundation for Blind Children. Each of these organizations will also be equipped with public access workstations and offer special training programs to promote the independence and community participation of disabled individuals.

The Information Technology Department will manage the technical implementation of the project, and is currently responsible for developing, maintaining and expanding the City's technical infrastructure (PhoenixNet and ECAM) needed to support citizen access to electronic services and information. The other departments and organizations will develop and implement the training and outreach programs designed to reach targeted groups in addition to managing the facilities where the public access workstations will be located. The City of Phoenix Special Needs Center already has established a cooperative relationship with the non-profit special needs organizations and will be responsible for all the necessary coordination with those organizations.

Each of the partners in this project offers experienced professionals skilled in addressing the scope of work described in this project. For additional detail information about the departments, organizations and professional staffs refer to page 25.

WHO WILL BENEFIT

While virtually every citizen in the City of Phoenix stands to benefit by increased community access through public access workstations, certain targeted groups will be more profoundly impacted by this project. Disabled, elderly and economically disadvantaged citizens face greater hardships in achieving community access than other individuals in the city. Frequently, these target groups are not mutually exclusive. For example, it is not uncommon for a senior citizen to also be disabled and economically disadvantaged. The locations of the public access workstations and assistive technologies were carefully selected to have the most significant impact on these targeted individuals. Individuals within the targeted groups who either frequently visit these locations or live within three miles of each facility will benefit directly from this project. Review of the demographics of the neighborhoods surrounding each facility (see page 30) and the users of the facilities (see page 32), gives a clear indication that literally thousands of individuals in the target populations will benefit from this project.

Due to the unique issues facing the targeted population, the City has been strategic in addressing the needs and skills of these individuals. User needs were determined a number of ways: First, professionals experienced in working with the targeted populations participated in site selection, technology selection and the development of outreach and training programs. Several of the partner organizations are peer-to-peer and work very closely with disabled individuals. As a matter of fact, several staff members of these organizations are disabled themselves. Secondly, the Phoenix Special Needs Center recently completed a formal needs assessment of their users, the results of which will be published in the March/April, 1995, edition of *Public Libraries*. Many of the decisions made in this project were based on the specific user needs identified during that study. Thirdly, Special Needs professionals worked with the facility staff most familiar with the capabilities of clientele at each facility to match assistive technologies and training programs to the needs of the users in the community and senior centers.

In addition to the assistive technologies, perhaps the most significant need being met by this project is the reduction in travel requirements to actually get to a public access workstation. As an example, 85% of respondents to the needs assessment conducted by the Special Needs Center indicated that transportation problems preclude their use of the Center. Due to the nature of their disabilities, many must rely on public transportation. Users often reported two-plus hour bus trips, including multiple transfers, to get to the Central Library. By placing the public access workstations in the locations already frequented by the target groups and within three miles of most neighborhoods (refer to the map on page 34), previously underserved individuals can easily take advantage of the services offered on PhoenixNet.

Several organizations representing and serving the targeted populations have written letters of support for this project. A listing of the letters of support received, as well as a few sample letters, are presented on pages 35 - 43. It is anticipated that the Citizen Advisory Boards of each facility will participate in the ongoing community outreach and service definition activities. In addition, the City's Information Superhighway Task Force is conducting a series of citizen surveys to determine the types of services that would be of interest to all citizens in Phoenix.

Training is a key factor for increasing access for disadvantaged populations. While youth and working adults are becoming more familiar with new information technologies in the school and work place, older, poor and minority citizens do not have the resources to obtain either the technology or the training to use it. People who have an impediment to learning, such as age, limited facility with English, poor sight, hearing or muscular tremors, may be reluctant to join younger users in learning situations.

In addition, working with assistive technology is often an adventure and opportunity to learn, sometimes shoulder to shoulder with users. Most of the current generation of assistive technology requires a training and

learning period. For example, not only do blind and visually impaired users need to learn an application, but they must also learn how to use the screen reading software and speech synthesizer - an extra step to getting in the information needed. Simply providing assistive technology is not enough to facilitate its use in accomplishing a particular goal. Assistive technologies will not be used unless adequate training and assistance is available.

To meet the special training requirements of the targeted populations, two separate training programs have been developed. The first is targeted at the assistive technologies and disabled citizens utilizing the special needs centers and organizations. The second is targeted at senior citizens and other individuals utilizing the senior centers and community centers.

The Special Needs Center Staff at the Central Library will share its knowledge and experience while assisting other staffs in developing training programs to help users utilize the assistive technologies. Focus group will be formed to give direction to the training process and then training will be developed and offered to users and partner organizations. The Special Needs Center staff and professionals from the partner organizations will meet to determine how training will be designed to meet the needs of the potential users and how the users can be continually involved in outreach and training programs. In most cases, individuals will be trained in one-on-one sessions at the special needs centers and partner organizations in order to meet the unique needs presented by each individual's disability.

To tailor the learning environment to the needs of senior citizens in the Senior Centers, a group of senior citizen volunteers will be trained to provide individual instruction paced at the speed of the learner and supplemented by explanations in the native language of the learner if necessary. Volunteers from the Senior Centers who have teaching experience and are computer literate will be given specialized instruction on the specific equipment and software by professional trainers. These trained seniors will provide training to potential users in the Community and Senior Centers and serve as a future resource to new users. Training will be individually tailored for the center and the interested users. Initially some small group sessions in the larger centers will develop a core of trained users. Those who are interested can volunteer to be "computer buddies" with a less-abled person. Computer buddies will serve as hands-on instructors to clientele wishing to learn about workstation use. Daily rosters will be maintained in each location that will allow any person who needs instruction or assistance in accessing the electronic information available to sign up for time with a computer buddy.

Senior Centers currently provide a variety of services and instruction using volunteer instructors. The centers register the volunteers, track the hours of participation and provide volunteer recognition to encourage continued participation. They evaluate the performance of the volunteer and assure a satisfactory level of service. This volunteer service will be organized in the same manner that generates approximately 10,000 volunteer hours of service a month in the centers.

EVALUATING THE PROJECT'S SUCCESS

The purpose of the overall evaluation plan is threefold: First, to determine that targeted populations are able to access PhoenixNet services and information utilizing the new infrastructure; second, to assess the satisfaction of these users with the technologies and training programs being offered; and finally, to verify that the outreach programs are indeed reaching the targeted populations. Due to the different targeted populations, diverse facilities and professional staff, and multiple training and outreach programs, a series of evaluation techniques will be employed. Components of the plan are as follows:

1. The staffs of the City of Phoenix Special Needs Center and the three partner organizations will evaluate the satisfaction with the technology and training experiences after six months of the

implementation of the assistive technologies to determine whether the technologies selected and the training offered are meeting the needs of the disabled citizens.

2. The City of Phoenix Special Needs Center will develop a fast response user survey which will be distributed to each of the partner organizations. Users will receive a survey as they complete the training to determine satisfaction with the program. Some users will receive a survey after using the assistive technologies offered at each location.
3. Senior Citizen volunteer trainers will evaluate the initial training using the forms developed and provided by the professional trainers. These forms will be reviewed by staff, and any corrective action indicated will be taken before the next training session.
4. The volunteer trainers in the Computer Buddy program will develop a survey instrument for their students. This form will be distributed to each person who receives training or assistance. The volunteer trainers will review the surveys and modify the training and assistance as necessary.
5. The Center Manager at each Senior Center will review the progress of each Computer Club at least twice a year to determine whether the Computer Buddy program is reaching the targeted populations at each facility. The first review will be within one month of installation of the equipment.
6. The Public Information Office of the City of Phoenix will coordinate the development of a customer satisfaction survey targeting specific audiences to determine the effectiveness of the educational and publicity efforts.
7. After the workstations have been up and running for a period of three months, the Public Information Office of the City of Phoenix will conduct a survey of randomly selected Phoenix residents who will be asked to evaluate the program.

Project progress and evaluation results will be communicated in existing newsletters targeted at the populations such as the Public Library Special Needs Center's "Special Byte" newsletter and Arizona's Bridge to Independent Living's "The Bridge" newsletter.

In addition to the evaluation plan, an Information Dissemination Plan is currently being developed. As a result of the 1994 THAP grant award, the City of Phoenix has been contacted by many other agencies and organizations for information about the community access efforts underway in the City. Many materials and documents have been handed out in an attempt to communicate the approach taken, the progress realized and the issues faced by the City. In order to more clearly communicate with interested parties, the Information Technology Department and the Public Information Office are currently working together to publish literature which will describe overall project, policies, objectives, technical approach, strategic plan, and experiences of the City relative to community access efforts. Literature is being prepared in such a way as to allow a compilation of various components that will communicate effectively to various audiences including the public, media, management, internal city staff, technical experts and third party vendors. The Information Dissemination Plan and related materials will be expanded to include the efforts and results of this project as well.