The Collaboratory Project: Collaboration and Outreach
http://collaboratory.nunet.net/

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Today there is great concern about connecting schools and libraries to the Internet and providing universal access to information and technology. Colleges and universities can play an important role by helping these organizations take advantage of network technologies. The Collaboratory Project is a Northwestern University initiative funded by a four-year, $1.8 million grant by the Ameritech Foundation. The initiative is establishing a network-based collaborative environment that involves education, research, cultural, nonprofit, business, and industry communities in the greater Chicago area. The Collaboratory Project provides the consulting, training, technical support, application development, tool and resource integration, and the information and communication services that makes it possible for institutions to successfully carry out meaningful educational activities that might otherwise be technically impossible or prohibitively expensive.
INTRODUCTION

Today there is great national concern about connecting schools and libraries to the Internet and providing universal access to information and technology. Colleges and universities that have already solved many of the technical and support problems these institutions face can make important contributions by sharing their experience developing and supporting network services and helping these organizations take advantage of network technologies.

The Collaboratory Project is an initiative funded by a four-year, $1.8 million grant from the Ameritech Foundation that is making it possible for Northwestern University to address this need in the greater Chicago region. The grant is enabling the University to extend the expertise it has developed creating its own network infrastructure, establishing a collaborative environment for Northwestern students, faculty, and staff, and supporting diverse education and research activities to other institutions. The Collaboratory Project provides consulting, training, technical support, application development, tool and resource integration, and information and communication services to education, cultural, and nonprofit organizations that are interested in taking advantage of network technologies. It is establishing an interoperable set of resources, tools, and services that makes collaboration, cooperation, and access to resources easy. By removing technical barriers to accomplishing objectives and delivering services, the Collaboratory Project is attracting a large and diverse community of participants. The Project is making it possible for many institutions to successfully carry out significant and meaningful educational activities that might otherwise be technically impossible or prohibitively expensive.

The goal of the Collaboratory Project is to establish an easy-to-use, networked-based collaborative environment that enables education, cultural, and nonprofit organizations in the greater Chicago region to work together to share information, resources, and expertise. This collaborative environment, the Collaboratory, is a laboratory for the deployment of resources that facilitate effective collaboration to further education in ways that are much less constrained by the logistics of time (people and information being available at the same time) and space (people and information being in the same geographic location).
SERVICES AND SUPPORT
Staff Support
Support and services provided by the Collaboratory Project are free but are available only to organizations with specific projects and initiatives that can benefit from network services. These services are organized around three areas. User Services provides workshops, documentation, and on-site support. Network and Infrastructure Services works with organizations to address their local and wide area network needs, assists in establishing local intranets, and provides web hosting and conferencing services. The Collaboratory Project also provides Application and Multimedia Development Services to create applications and resources that can be used by a variety of projects. A senior staff person oversees each area. Student consultants help support projects, as appropriate. In addition, the Collaboratory Project provides an opportunity for graduate students to share projects and expertise developed at Northwestern University with a broader community.

Collaboration Environment
The Collaboratory Project provides network and communication services that organizations might find technically impossible or too costly to provide. These services include hosting web pages, database support, and electronic mail. Web-based conferencing forums that enable project participants to share information and ideas from a web browser without requiring electronic mail accounts are proving to be a very important service, especially for projects involving people from different organizations. The Collaboratory Project is also developing digital audio and video services. These resources and services make up the Collaboration Environment which is built on the Collaboration Infrastructure of networks, servers, and communication software, and supports the various projects and activities of the Collaboratory community.

ESTABLISHING PARTNERSHIPS
In order to cultivate a collaborative community that is increasingly self-reliant, the Collaboratory Project focuses on supporting model projects. These projects are often examples for network initiatives sponsored by the Collaboratory Project that are intended to attract broader participation in the Collaboratory community. Developing a model project involves establishing a partnership with an organization that includes a commitment by the Collaboratory Project to provide consulting, training, and support for the project and a commitment by the organization to a schedule for accomplishing specific objectives.

Initial Contact
The path to a partnership begins by meeting with the director of an organization or the principal of a school to introduce the Collaboratory Project and discuss how network technologies might help the organization accomplish specific objectives. Support and involvement by the head of the organization assures that a project is consistent with organizational goals, participation in the project is clearly recognized, and internal resources will be made available, when necessary. If opportunities exist that an organization is interested in pursuing, discussion focuses on bringing together a project...
team that can be the catalyst for integrating network technologies within the organization.

**Forming a Project Team**
The next step in establishing a partnership is to meet with potential members of the project team to learn about their activities, interests, and concerns and discuss project possibilities. The project team must understand the benefits of the project and be willing to take on additional responsibilities. In addition, a project team leader needs to be identified who can act as the technical liaison with the Collaboratory Project and makes sure the team remains on schedule.

**Defining a Project**
The most attractive projects build on existing activities that can be enhanced by the use of network technologies, provide opportunities for staff development, and can be accomplished within three to nine months. Projects should begin with small, focused activities that have as little technical overhead as possible. They must be interesting and important enough for the project team to commit the necessary time and energy to accomplish its goals.

**Training**
If there is a commitment to a project, an introductory workshop is scheduled to give participants a common framework for working with network technologies. Participants must already know how to use a computer and be comfortable using basic productivity applications. For schools, the first workshop often includes further discussion about project possibilities, an introduction to using the World Wide Web with an emphasis on doing intelligent searches, and learning how to use a Web-based conferencing forum. The conferencing forum is used to share information and ideas among the participants as well as with other projects being supported by the Collaboratory Project. Learning how to create web pages with a visual or an HTML editor is another common starting point for project teams.

**Supporting a Project**
Consulting, training, and technical support are provided, as required, to address the specific needs of a project. It is important that issues and problems be quickly resolved and not interfere with the project. On-site support and consulting is scheduled to assure that projects continue to progress. Additional and advanced support to the project leader or technology support person is available so s/he will be in a position to answer questions and provide information on-site when and where it is needed. Network resources from the Collaboratory Project are also available to facilitate project activities. If necessary, the Collaboratory Project will develop enabling resources or tools for a project, especially if it is something other projects would find useful.

The greatest obstacle to a successful project is not the technology but people having enough time to work on something new while continuing to meet their existing responsibilities. In order to help project teams begin meaningful work, the Collaboratory Project works with organizations to free people for an entire day to work at the
Collaboratory Project Studio. Working one day at Northwestern University on new computers with up-to-date and properly installed software, reliable network connections, and immediate staff support can give a project the momentum it needs to succeed.

CURRENT PARTNERSHIPS
The Collaboratory Project has begun to develop a variety of projects with education, cultural, and nonprofit organizations in the greater Chicago region. These activities help the Project identify and develop services that will benefit a broader community. They also suggest broader network initiatives that other organizations might be interested in.

Chicago Public Schools
The Collaboratory Project is working with project teams from a number of Chicago public schools to develop examples that will encourage teachers to begin to integrate technology into their classrooms and provide models for how network technology can benefit education. The technology infrastructure in these schools ranges from a single computer in the library with a modem and phone line to networked computers in every classroom and a school cable TV system. Most schools the Project works with have a computer lab that has recently been connected to the Internet. Projects with the Chicago Public Schools include the following:

Avondale School teachers are developing ways to use network technologies to support classroom activities around the school-wide theme of *Animals of the World*. The Collaboratory Project is also helping teachers prepare a year-long staff development program.

The foreign language teachers at the Murray Language Academy are putting their school on the web in French, Spanish, and Japanese as a way to stimulate student foreign language activities and attract partnerships with schools in countries that speak French, Spanish, and Japanese.

The Waters School is researching their local neighborhood, making this information available on the Web as a community resource, and exploring ways to address the issue of providing community access to this information.

The Collaboratory Project is also working with teams of schools that are interested in working together on common projects and activities. For example:

The Collaboratory Project is helping the Armstrong, Decatur, Rogers, Jamieson, and Stone schools use network technologies to support an active problem solving initiative. Teachers involved in the project use a web-based conferencing forum to coordinate the program and students at the different schools can use the forum to support working together as distributed problem solving teams.

The Prussing, Clinton, the Hayt schools are creating school newspapers on the Web so their students can begin to learn about each other and as a way to develop web
production skills for the entire school. They are also developing ways to use the Web to support language arts activities by sharing reading and writing assignments.

**Education Organizations**

In addition to schools, The Collaboratory Project supports education organizations and consortia that are working to take advantage of network technologies. These partnerships include the following:

The **North Suburban Higher Education Consortium (NSHEC)** represents over thirty colleges, universities, community colleges, and high schools in communities north of Chicago. It is one of ten regional higher education districts in the State of Illinois. The *Faculty Technology Workshop* was developed for faculty from NSHEC institutions prepared to create Web-based materials for their courses. Two groups of twenty instructors participated in a week-long series of half-day workshops. Follow-up meetings to share the progress of projects and discuss the challenges of using network technologies in the classroom have been scheduled for the academic year. The Collaboratory Project will be working with NSHEC to define a technology initiative that includes workshops and developing common guidelines for infrastructure and support.

**Illinois Computer Educators (ICE)** is a state-wide organization of approximately 1500 Illinois K-12 teachers who are using technology in the classroom. A summer production workshop for the coordinators of the eight regional chapters was held over the summer to develop ways of using the Internet to effectively share information and experiences using technology in the classroom among Illinois teachers. The Collaboratory Project created a set of templates that the chapters used to create a new *ICEberg* web site.

**Cultural Institutions**

While cultural institutions are eager to be on the Internet, the Collaboratory Project does not offer web-creation services. The Project’s efforts with museums, for example, are focused on helping them use the Internet to provide information and resources for education that stimulate educational activities, provide new opportunities for taking advantage of museum resources, and gives students compelling reasons to visit the museum. These activities typically leverage resources and educational materials developed for exhibitions. In addition, the Project is helping museums create database resources that support student observation and data collection activities that can be shared on the Web. The Project is also working with museums to encourage more interaction with schools by using desktop video conferencing to support virtual office hours, on-line *chat* resources for real-time group discussions, and desktop video broadcasting to support special presentations to multiple classrooms. Examples of activities with museums include the following:

The Collaboratory Project is working with the nine major Chicago museums that make up **Museums in the Park** to create a network resource called **Museums Online**. This project is putting information about activities, events, and resources that
are typically found in each museum’s brochures and publications into a web-searchable database. *Museums On-line* will enable a student to locate resources for a report, parents to find an interesting weekend activity for the family, and teachers to identify useful classes and education resources.

The Collaboratory Project is working with the **Field Museum of Natural History** to develop network activities for teachers and students around the new permanent exhibition *Living Together - Common Concerns, Different Responses*. It is also working on a pilot observation, record keeping, and data reporting project for the Illinois *SoilWatch* initiative and in anticipation of the exhibit *Life Underground: Foundations of the Biosphere*.

**Nonprofit Organizations**

A nonprofit organization’s ability to take advantage of the Internet is often constrained by a lack of technical skills and not having the resources to hire a web designer or pay an Internet Service Provider. These obstacles can prevent a nonprofit organization from being able to take advantage of the Web to provide information about their services, attract volunteers and contributions, and identify organizations with common goals to work with. Examples of how the Collaboratory Project is working with nonprofit organizations to remove these obstacles include the following projects:

Working in partnership with the **Information Technology Resource Center (ITRC)** the Collaboratory Project has developed the *Get on the Web!* initiative for nonprofit organizations that includes a two-day web production workshop. ITRC offers workshops and support to nonprofit organizations that need to develop the necessary technical skills required to take the workshop. The workshop provides organizations with a set of well-designed templates that are used to present information and includes Web site hosting for at least a year.

The Collaboratory Project is working with the **Latino Institute** on the development of *Latino On-line*, a Web site to provide information for and about the Latino community. *Latino On-line* is working to empower the Latino community of Chicago by helping to develop information resources and technical skills.

**NETWORK INITIATIVES: ATTRACTING A BROADER COMMUNITY**

In order to be able to scale up to support more organizations and encourage greater participation, the Collaboratory Project is developing network initiatives that organizations can participate in electronically. These network initiatives are especially important for working with schools because they provide an effective way to share the experiences of model projects and replicate successful activities. Equally important, they can bring schools together to work with each other. Network initiatives often grow out of the ideas and activities being developed by school project teams and include the following:
Curricula Gateways is an initiative to help school librarians and teachers identify and organize Internet resources around specific curricular needs. In addition to working with groups like the Learning Powers Initiative of the Chicago Public School Libraries Department to create virtual school libraries, the Collaboratory Project maintains a web-searchable database of Internet resources that individuals can submit recommendations to.

The Science Connection is an umbrella for various science activities that the Collaboratory Project is supporting. It includes Northwestern University scientists and engineers who have volunteered to respond to teacher/student questions electronically. It also includes projects being developed with museums that encourage student inquiry through data collection and web-based data sharing.

The Internet Book Club helps teachers from different schools coordinate their classroom language arts activities. Students from different schools can use a web-based conferencing forum to discuss what they are reading or share classroom activities. Students can also submit reviews of books they have read to the Critic’s Corner or share and discuss their writing projects.

BENEFITS
Helping education, cultural, and nonprofit organizations learn how they can take advantage of network technologies is a service Northwestern University can provide that is timely and highly-valued. Organizations benefit from impartial consulting and information based on proven University solutions. Working with the Collaboratory Project reduces the overhead for starting projects and the risk of investing in technology. It makes it possible for under-served communities that would otherwise find projects financially and technically impossible to participate. Opportunities for collaborating with other institutions make it possible to leverage the skills and resources of an organization.

Northwestern University also benefits from the activities and partnerships of the Collaboratory Project, especially those that result in new education resources for Northwestern students and faculty. The Project encourages broader participation in Northwestern University education-based activities, and provides new opportunities for research and to evaluate the impact of technology in a variety of areas.

Without the support of the Ameritech Foundation, Northwestern University would not be able to provide the staff to work with education, cultural, and nonprofit organizations in the greater Chicago region. The Collaboratory Project promotes the Foundation’s goal of encouraging the use information technology and telecommunication services to benefit education. Equally important, it leverages the Foundation’s investment by assisting a variety of organizations directly, sharing the experience gained from projects, and facilitating the replication of successful models.
CONCLUSIONS
The Collaboratory Project is not a teacher development initiative with a curricular agenda or teaching methodology to promote for K-12 education. It is not a Web production service with products for museums and cultural institutions interested in creating virtual exhibitions. Nor is it an Internet Service Provider offering services to nonprofit organizations for distributing information, automating services, or attracting contributions.

The Collaboratory Project’s approach is based on Northwestern University’s experience connecting the entire University community to the campus backbone to assure that everyone could participate equally in the campus network environment. This experience demonstrates that by removing technical and financial obstacles, providing easy-to-use resources, and making support readily available, people will develop innovative and meaningful ways to use network technologies. The Collaboratory Project is replicating this model by establishing an easy-to-use, network-based collaborative environment that makes it possible for the projects and activities described in this paper to succeed. While it is difficult to predict which projects will succeed, the Collaboratory Project is confident that the approach being taken will result in compelling models for how network technologies can benefit education and a community that is increasingly self-reliant and able to work together to meet common goals.