

I. Project Purpose

Maine is a large, rural and relatively poor state¹ but one extremely proud of its historical heritage. Despite the state's general lack of resources, there is a strong community commitment to preserving, interpreting and using that history. There are 223 local historical societies, 77 museums, 288 libraries, and 5 archives. A few of these are major institutions—well-funded, endowed with representative collections, active in community outreach—but almost all have the necessary ingredients for success: important and revealing primary documents, a local following, and a natural, though not always active relationship to their community school systems.

There is however a problem—one that Maine Historical Society, chartered in 1822 as the State's official historical agency, has heard often. People outside the cultural centers can not share in the resources of larger organizations. Rare, fragile, one-of-a-kind documents and artifacts can only be seen if people travel to them, or if they are published; the documents themselves, except in very controlled and limited circumstances, do not travel. Barred by geography, as well as economic and technological limitations, rural schools, libraries, historical organizations, and researchers simply do not have easy access to the historical documents that define their past, nor can they easily participate in the dialogues that occur in the larger population centers. Many voices are lost when history is defined by a few.

But the problem works the other way as well. Urban populations don't have easy access to or knowledge of the documents, perspectives, and interpretations of more dispersed rural communities. The stunning images of Maine's 19th century granite operations, for instance, which helped build the great cities of America, are today squirreled away in tiny island historical societies. The history of Franco-Americans in the textile mills, upon which the economy of Maine and New England so long depended, is equally lost, or rather, is equally unshared. In almost every established but remote institution there are hidden treasures that help explain who we are and what we have done. Unfortunately, a narrow and in some cases shrinking industrial base and generally low incomes have inhibited small local historical organizations, libraries and archives from entering the digital age, disseminating their collections, and participating in the statewide dialogue on Maine history and culture. Even simple exhibitions are beyond the capacity of many organizations.

The Maine Memory Network is an answer to this problem: a way to remove the geographic isolation of cultural institutions, draw the history of the state together in all its rich complexity, give all Maine people access to important cultural documents, and involve the maximum number of citizens in the appreciation and interpretation of their history. In development for over a year, the Maine Memory Network is now ready for implementation. Its database, web interface, input system, cataloguing standards, and interactive tools have already been created and are in the beta-testing phase. In the implementation phase, for which we seek funding here, the network will truly come into existence. At least 100 contributing institutions will be identified through a systematic outreach process. These partners, together with the MHS, will use a web browser to

¹ Maine is almost as big as the other 5 New England States put together. Its northern wilderness in Aroostook county is larger than the combined size of Connecticut and Rhode Island. Its population of 1.2 million is concentrated in the southern half of the state, though even its largest city, Portland, is small by national standards: 60,000 people. The state ranks 41st in Average Adjusted Gross Income and 38th in Average Per Capita Income (1998, IRS SOI Bulletin, Spring 2000).

upload and catalog 50,000 new documents directly into the centralized, web-accessible database. Public visitors to the site will search and view these documents, of local, state and even national significance, and interact with a wide variety of media, including photos, letters, transcriptions, paintings, museum artifacts, sound and video files, and informative secondary sources. Visitors will even be able to use the contents of the database to create and share their own personal online archives, stories, and lesson plans. Finally, every school in Maine will be encouraged and helped to make use of the Network and the treasures it contains.

But the question may be asked: Is this something people really want? Is there an audience? Since the beginning of the Maine Memory Network project we have been encouraged and motivated by the success of the Library of Congress's American Memory site, which by some estimates receives 60 million hits per month. In an age of spin, it is clear that people, more than ever, want access to the real, unvarnished thing—the touchstone of their knowledge and opinions. Nor does the fact that these are digital representations take away from their luster. As numerous scholars of the museum experience have pointed out, it is the climate of reproduction that creates the value and allure of the original. Those who have seen the site in action, from teachers to scholars to kids, so far agree. We fully expect that using the interactive digital environment will tremendously expand the active participation of young and old, rural and urban, novice and professional in the preservation and development of Maine's cultural and historical heritage.

II. Innovation

A. Distributed Input

In contrast to previous TOP funded projects, such as those at the Denver Public Library, The Museum Computer Network (Maryland), and the “Northern Journeys” project of the U. of Alaska Museum, the Maine Memory Network seeks to digitally gather and disseminate significant documents from communities and organizations throughout the state—not just those of its initiating institution. Indeed, in the early stages of the Network, which entailed the search for models throughout the country, we did not discover anything close to the statewide umbrella scheme we had in mind. One good reason was that devising even the simplest, single-institution database for image retrieval was fraught with technical and standardization problems. After nearly a year and a half of development, however, we think we have worked the problems out and have come up with an innovative and technologically feasible system.

The Maine Memory Network is based on the many-to-many model of information sharing through distributed input and dynamic output models. By distributing the input across the state, that is, by allowing other organizations to input high resolution document scans from their own locations, not only have we moved beyond the traditional one-way communication model but we are able to exponentially increase the number of documents in the system. Such fluidity, however, requires controlling protocols, which is why every document in the system will be individually catalogued at its source according to the Dublin Core system² and in adherence to Library of Congress subject standards. Though the MMN record is streamlined to some degree, helping organizations become familiar with the system will be an important part of outreach in the implementation phase. As a fail safe, all incoming records will be placed in a "holding tank" for review and correction by the Maine Memory Network Project Cataloger.

² Dublin Core was created specifically for cataloguing in the digital age. For more information, visit <http://dublincore.org>

The input function is also designed to facilitate local control and local identification—something extremely important, we learned, to most potential contributors. The location of the original document is clear in every record, and links can take the visitor back to a contributor's web site, if it exists. Contributors will also maintain complete control over their group of documents, even after they are placed in the system. Should an organization find new information about a document, they can update the record. Should they want to take an image off the system, they can delete it. Should they want to keep it in the system, but make it not accessible by the public, they can take it offline. In no way is the Maine Memory Network taking exclusive rights to any document. Images are watermarked and displayed at 72 dpi, to minimize the risk of theft or copyright violation.

B. Dynamic Output

In order to make the Maine Memory Network useful and engaging, we have implemented dynamic HTML functions to make the experience personal to individual users. (See Appendix A for sample screens.)

Searches: These include the usual kinds of key word and advanced delimited search mechanisms as well as higher order search functions, which should be particularly useful for younger users. These include pages for a geographical *Search by Map*, a subject driven *Search by Themes*, a timeline oriented *Search by Events*, a biographically based *Search by People* and a *Search by Collection* page that presents full or partial collections in the database. If a search returns no documents, the system will suggest related searches based on the cataloguing records in the database. A user's past searches are also remembered by the system.

Creative Interactivity: Documents can be manipulated by the user in many interactive ways, from the relatively simple creation of an e-mail post card, with or without new user-created text, to enlargements, to perhaps the most interesting function of all: the ability to create multiple personal *Albums*, in which groups of images can be saved, arranged, annotated and returned to at a later date. *Albums* can also be mailed to colleagues or friends and be edited by them, which means the album function will become a useful collaborative tool. Implicit in the *Album* and its operation is the ability to make and share digital documentaries, stories and slide shows based on the contents of the database—a creative power available to the contributing organizations as well as to individual users. Site administrators can easily group together documents, add text, click a button, and create a slide show documentary. Audio and video files in the database can easily be added to create multimedia presentations. (Organizations may also link directly to the documentaries they create from their own websites or create searches on only their documents from their websites.) In fact, the *Stories* section of the site represents a growing list of digital documentaries on Maine history created by the Society and eventually by contributing organizations will add their own. In this sense, *Stories* represents a kind of magazine, another high-level interpretive function designed to attract the casual but curious visitor.

C. Focus on Usability in the Schools

The use of primary documents in school classrooms is now a common feature of many curriculums; Maine Historical Society, in fact, is contacted on a weekly, sometimes daily basis by teachers seeking the historical sources. For this reason many digital museum/archive sites pay special attention to the schools and educational use. The value of such functions, however,

depends on the extent to which the needs of teachers have been taken into account. In Maine two important movements set the educational stage. The first is the Maine Information Technology Act, brokered by the Public Utilities Commission and Verizon Communications, which seeks to overcome rural isolation by placing the internet and computer equipment in every school and library in the state, and by currently upgrading most of those connections to T-1 lines. Teachers, in other words, have the capacity to use complex sites and to share their ideas, if given the proper tools, however isolated their school systems may be. The second is the Common Core of Learning Educational Initiative, which has identified specific Learning Results for all grades and all subject matter. Every educational resource in Maine is measured by its applicability to the Learning Results.

With this in mind, the Maine Memory Network has been designed to make teaching easier. The site provides a ready reference section to the Learning Results Curriculum Guidelines, and uses those guidelines in developing its own lesson plans. The Album function allows teachers to build their own lessons and resources and use them in variety of ways in the classroom. But perhaps more importantly, the interactivity of the site, and the ability to save albums, means that teachers may share their lesson plans, stories, and slide shows by posting them directly back to the site. In this way the Network becomes a constantly evolving source of new ideas attached to immediately usable resources. Finally, we have given teachers a feedback function to tell us about what they need, ways they are using the resources, and how we can help them best.

D. Electronic Commerce

Like the Denver Public Library project, the Maine Historical Society intends, eventually, to benefit from the sale of images from its archives. But more importantly, the e-commerce function of the Maine Memory Network will benefit every contributing organization that chooses to offer its images for sale. The site has been designed so that copyrighted images can be licensed and purchased through secure e-commerce tools. Credit card transactions are automated, and users can purchase a high resolution electronic file (delivered via email), or their choice of a high or regular quality print. The e-commerce function will grant the proper copyright licensing for legal use in private and public projects. The Maine Memory Network will distribute profits, minus a small handling fee, back to the contributing organization. Although we are in the beta testing phase, we hope this becomes a revenue model that gives contributing organizations a way to generate income and the MHS a way to augment the support of its site.

III. Diffusion Potential

The Maine Memory Network speaks to a common recognition in the historical and museum community: while we are generally aware of the cataloged and archived treasures in major collections, we can only guess at what documents and images are hidden in smaller libraries, historical societies, museums, and private collections. This often leads to the wish for a centralized searchable database of all collections, similar to the now prevalent merging of state library catalogues. Discouragement, however, often follows as the apparent difficulties of centralizing outweigh the advantages.

The Maine Memory Network offers a centralizing model that uses, rather than cancels, the distributed computing power of the internet. Cultural and archival organizations large and small work together to create an entirely new resource that encompasses and makes accessible the heritage of their state. It does so, furthermore, at an annual cost that is competitive with many of

the national proprietary databases that state-wide library systems often subscribe to, as well as providing a potential revenue stream for organizations through their collections.

The potential of the Network has already been recognized. Recently the National Endowment for the Humanities requested proposals from the State Humanities Councils to plan for the creation of a model digital state encyclopedia. The Maine Humanities Council has included the Maine Memory Network in its planning proposal as one of the most advanced and flexible web applications it has seen (see letter from Dorothy Schwartz in Appendix B, page 25). At a different level, as the letter from Maine's State Archivist, Jim Henderson, points out, the Network is being suggested to the State Legislature as an important step in improving public access to historic records.

In addition, the Network is now being studied, for the National Rural Culture Initiative of the Pew Charitable Trust, along with a number of other related community and cultural development programs in Maine (see the discussion of the New Century Program below). The first comments have been glowing and we fully expect that our activities will be highlighted in their national report.

Although the Maine Memory Network is not even a public fact yet, interest is actively growing at all levels. The executive director of the MHS, Richard D'Abate, is in fact already spending considerable time in demonstrations and consultations, and the principal managers of the project, Dan Kaplan, director, and Stephanie Philbrick, research manager, are both presenting at school and technology conferences in Maine.

Because we believe this project is unique in its scope, with potential for replication in other states, the executive director, a recent member of the Conference Committee of the American Association of State and Local History as well as the co-chair of the New England Museum Association Annual Conference, will be proposing panels for the annual conferences of these organizations that focus on the potential of digital networks in general and on the Maine Memory Network in particular.

IV. Project Feasibility

A. Technical

At the heart of the Maine Memory Network is a powerful database that houses electronic versions of Maine's historical documents. The database currently holds nearly 1,000 items, but due to the design of the system there is no theoretical limit to its scalability. The system uses a MySQL database, developed with industry standards and configured for the MHS by Aurora/Quanta, a Portland-based stock image photo company established to promote the sale of National Geographic photography. In this system high resolution scans (40 megs for color, 13 megs for black and white) reside on one server while low resolution versions are automatically created and sent to a web server. This not only facilitates site-speed but protects high quality scans from theft or misuse, an important aspect of the e-commerce function. The serving software also makes possible the storage and retrieval of personal *Albums*, the heart of MMN interactivity. This function, however, requires some form of personal identification, an particularly sensitive issue where children may be users. Except in the case of purchase, we have therefore taken pains to protect the privacy of those who do log-in and have made access as easy an anonymous as possible: a password and a zip code are all that is necessary.

While it was clearly possible for us to purchase the serving capacity that would be required to run the system, we did not. Rather, we elected to use Aurora/Quanta's server farm, located in Cambridge MA. We did this for three reasons: 1) The Cambridge operation incorporates sophisticated safeguards and redundancies to ensure smooth, quick and constant access to the site; 2) We did not have sufficient on-staff expertise to monitor, maintain, or upgrade the server software and hardware; 3) The price of renting server capacity from Aurora was not unreasonable, especially in the early stages of the project (at the moment we pay \$450/month to store up to 8,000 images, but increments are inexpensive: storage for up to 50,000 will cost under \$1,000 per month). While this may not be the ultimate server solution (we have had some discussion with the University of Maine System around this subject) it is a reasonable way to begin.

Interoperability was a major issue in planning the cataloging protocols. We were concerned about this in two directions: Up from the Network toward the Library of Congress, and down from the Network through the myriad cataloguing systems of our contributing partners. Though it may seem quixotic, our ultimate goal was to have a system that could easily be shared or incorporated at the national, state and local levels. This meant avoiding strange new deviations and fixing on the MARC record as the standard. Because the MARC record is not without drawbacks, however, especially from the museum/archive point of view, we adopted the Dublin Core cataloging system, which is a flexible way to relate various non-library cataloguing protocols to MARC and which simplifies input. In this way we have created a system that will be field-friendly without closing off interoperability.

B. Content

To date the thousand or so records in the database include photographs, paintings, architectural drawings, mechanical drawings, maps, letters, journals, notes, manuscripts, and other hand written materials (often transcribed and available as a searchable Adobe PDF files); as well as museum and archeological items of many kinds, sculptures, and audio and video files. These documents have been selected with an eye to what would be useful in schools as well as to representing the entire state geographically. We have also focused on perennial favorites like the Revolution and the Civil War. This, however, is just the beginning, and it is the job of the project team to continually fill out the spectrum of Maine history, both broadening and deepening the picture. In other words, management of the database content is a work of historical interpretation in itself, which must be carefully attended to.

C. Work Plan and Personnel

The implementation phase of the Maine Memory Network accomplishes two important tasks: it enables the site to go live, while sustaining its continuing growth and development, and, most importantly, it begins to build the network base of contributing partners. We have chosen to use two outreach consultants³ who will visit at least 200 cultural, educational, and collecting organizations in Maine over the course of the grant, and from among these we will recruit at least

³ Why a human rather than a technological solution to outreach? We have found that in Maine, as in other largely rural states, fears about technology and proprietary instincts about collections can only be addressed by present, caring, knowledgeable human beings. Once the field-work is done, the technology can take over.

100 contributing partners, training them in both scanning and cataloging technique (two portable field units—a powerful laptop and good scanner—will help acclimatize the less sophisticated institutions). These partners will then do two things: upload at least 160 images each over the course of the grant (their 16,000 plus 23,000 more from the MHS = the goal of 50,000 images), and then become trainers themselves for new contributing partners, thus perpetuating the growth of the MMN after the grant is over.

The implementation of the Maine Memory Network is guided by a management team with expertise in digital design, content creation, history research, and public outreach. Please see Appendix C, page 29, for detailed descriptions of the principals. Please also see Appendix D, (page 30 - 32) for a description of the Maine Historical Society itself.

V. Community Involvement

The Maine Memory Network is an outgrowth of an extensive assessment of state cultural resources and needs, conducted by the Cultural Affairs Council of Maine, a consortium of 7 major state and private cultural agencies including the Maine Arts Commission, Maine Historical Society, Maine Historic Preservation Commission, Maine Humanities Council, Maine State Archives, Maine State Library, and Maine State Museum. The result of this assessment was the creation of an unprecedented plan: **Maine Communities in the New Century: A Program for Cultural Revitalization**.⁴ Ultimately funded by the State Legislature, the plan included a wide range of grant assistance programs for historic preservation, library development, conservation of historic treasures and records, and programs in local history, art and culture. It also included seed funding (\$200,000) to develop the Maine Memory Network, which was seen as a key tool in the effort to increase the public's access to its own heritage. Over the last two years nearly 800 grants have been made in every corner of the state by agencies of the Cultural Affairs Council, affecting hundreds of thousands of Maine people. This has prepared the way. Organizations, community leaders, teachers and citizens throughout the state are eagerly anticipating the advent of the Maine Memory Network.

The seven members of the Cultural Affairs Council, each with its own extensive statewide contact network, are the Society's first-line community partners in the creation of the Maine Memory Network, and have advised us every step of the way. Throughout the development phase, however, we have also been advised by a steering committee of experienced producers and users of digital media, including representatives from the following organizations and businesses: The University of Maine System's Special Libraries, the Osher Map Library of the University of Southern Maine, the Portland Press Herald's Internet Information Division, Northeast Historic Film, Wired Digital, Fairchild Semiconductor, The Forum Financial Group, Parco Merged Media, web site developers including Image Works of Portland, Maine Street Communications of Rockland, Point Productions of Cambridge, MA, and representatives from the school systems of Portland and Bangor. These constitute our second line of community and advisory partners, and they have helped bring us to the present moment.

⁴ Significant cooperation and coordination between major state cultural agencies is sufficiently rare that the New Century program attracted the attention of the Pew Charitable Trust and the Charles Stuart Mott Foundation, who together made grants of \$180,000 to fund the evaluation of the project and its impact on Maine communities, economically, culturally, and educationally. The evaluation is ongoing and is being conducted by Mt. Auburn Associates of Somerville, MA, a firm with national consulting experience.

The third and most extensive community participation will come into being with the implementation of the Network. This will include hundreds of historical societies and museums, schools, libraries, and researchers, not to mention an extremely interested general public. In the course of development, we have tested our ideas with a number of such organizations, and already have—even before putting out a general call for participation—inquires from fifteen that wish to contribute to the Network. The same is true for schools. Having made presentations at a number of school conferences and introduced to the power of the site to teachers in two systems, we now have people in five different school systems working on lesson plans. Our belief, based on contact with partners and stakeholders, is that the Network partnership will grow significantly in the next two years and be sustained by the constant enrichment of the Network itself.

Evaluation

Our evaluation will directly address the 4 principle goals of our project named in our purpose: to remove the geographic isolation of cultural institutions, draw the history of the state together in all its rich complexity, give all Maine people access to important cultural documents, and involve the maximum number of citizens in the appreciation and interpretation of their history.

Our goals will be measured by a quantitative review of 1)the number of organizations who have been visited by the outreach program, 2)the number who have been trained to access and contribute to the system, 3)the number of items that have been scanned and added to the network, 4)the number of students and teachers who have been involved in the network and other similar output measures. The qualitative review strategy will include personal interviews and written/web survey questionnaires to assess the response to the network. The qualitative review will provide feedback on how user-friendly the system is, how relevant and helpful it was to the person accessing the network, and other attitudinal measures to determine the effectiveness of the network and guide its future development.

Other evaluative tools will review more specifically, with qualitative and quantitative measures, the outcomes relevant to the school environment and teachers needs. They will also attempt to answer the question of relevance to the State's *Learning Results* curriculum goals.

As previously noted, the development phase of Maine Memory Network is being evaluated by Mt. Auburn Associates of Somerville, Massachusetts, as part of the design of the New Century Program of the State of Maine. It is anticipated that Mt. Auburn Associates, given their knowledge of the network, will be favored candidates for the next evaluation phase.