

SUMMARY

With the support of the Bush Foundation, the Minnesota Historical Society proposes to become the digital content and service center for the cultural heritage of the Upper Midwest. With an expanded technological capacity, the Society will 1) build a regional network to be known as the Great Rivers Cultural Heritage Network (GRCHN) that will integrate access to the collections of diverse institutions and facilitate resource discovery; 2) enhance its capabilities through more robust, standards based, integrated systems that utilize best of breed solutions; 3) increase the quality and quantity of available digital content, in partnership with a variety of institutions; 4) sustain the infrastructure through the use of solutions based on open standards; and 5) ensure the necessary financial base by creating a demand for valued products that will result in ongoing funding and by offering particular goods and services that will provide direct financial underwriting. To achieve this transformation, the Society requests a grant of \$1 million, over the course of three years.

At present, the history and the historical resources of the region are fragmented, scattered across the states in different repositories and, within individual repositories, in different collections and catalogs. For the student, scholar or interested citizen to piece together any individual story requires crossing a host of boundaries: political, professional, geographic, institutional and conceptual. Those barriers are, from the perspective of any researcher, artificial. Technology can cross them. But it will not be possible, or even sufficient, simply to create more digital content and electronic tools within existing institutional silos. All of the partners in this collaboration face threshold hurdles that have kept each of them, in different ways, from creating an environment that will transcend those barriers. In some cases those limitations are financial, for others technological, and for many it is a lack of training and expertise. This project will address those key deficits and one other major need - the necessity to create a mechanism for the robust, synoptic searching of these electronic resources that is both domain specific and transcends the broad but shallow access afforded by current web search engines that are unable to penetrate the rich content of information stored within databases and networks of textual data.

This new infrastructure will expand the Society's capacity to manage, preserve and provide access to digital content. To create new content and to populate that infrastructure, the Society will use its own resources, work with its partners to develop their own content and explore different sources of funds and support. The results will benefit a variety of institutions and the region, by leveraging the Society's investment in a cyber infrastructure to lower the costs of all its potential partners, in order to deliver a wealth of digital resources to researchers over the Internet.

The Society is well prepared to foster this transition to the use of new and sophisticated technologies. It has the professional expertise: as an institution, it encompasses all the disciplines interested in cultural heritage activities, with an archives, library, museum, publications, exhibit and education program. It has the technological expertise: its web products and services are internationally recognized and it has integrated technology into its operations. Finally, it has the personnel: its staff members are leading their professions in the development of collaborative technology projects.

To sustain such work beyond the period of this grant will require all involved to demonstrate its value. Previous experience indicates that it will be possible to demonstrate value and show a clear return on the investment in this project. Given that, the Society can sustain the program through a combination of strategies: from additional legislative appropriations and

private or grant funding as clarified during the course of the project; by realizing internal efficiencies and re-allocating funds; and by increasing revenues. These are approaches that the Society is already exploring on a broad level. Our partners are equally interested in establishing clear value for their efforts and a positive return on investment that will sustain their participation as well.

Overall, the project will serve as a catalyst to transform the Society, giving it the capacity to be as innovative in the 21st as it has been in the 20th century. In the process, the Society will move from being simply the primary actor in its programs to becoming the primary collaborator and facilitator in the development of communities of users and of knowledge. This will position the Society to be the necessary partner in other technology projects that will knit together a statewide, regional and national cyber infrastructure for cultural heritage constituencies.

ORGANIZATIONAL STRENGTH

Artistic and educational programming

The Minnesota Historical Society is a private, non-profit educational and cultural institution established by the territorial legislature in 1849 to preserve and share Minnesota history. The Society collects, preserves and tells the story of Minnesota's past through interactive and engaging museum exhibits, extensive libraries and collections, 25 historic sites, educational programs and book publishing. Throughout its history, the Society's programs, museums and staff have made notable impacts on their audiences, communities and professions. For example, the Society provides extensive support to the K-12 education community through multiple programs that supports teachers: in the development of specialized curriculum that support state and national teaching standards, the publication of the basic textbook on Minnesota history, the nation's preeminent History Day program, education programs in our museums and historic sites and in classrooms, the development of web content for student research, and an e-newsletter for teachers.

In recent years, the Society has extended its reach through the innovative use of technology to support all its programs. While technology figures in all those activities, it will not replace any. Increasingly, though, it offers programs the opportunity to extend their reach, to include new partners and to meet the changing expectations of their customers. With this project, the Society expects to maintain its role as a leader and innovator in the cultural heritage professions.

Community participation

With a membership of over 17,000, the Society is the largest historical society in the nation. Its impact is far greater than that, though. Last year, more than seven million visitors made the trip to the History Center, Mill City Museum, the 24 historic sites statewide or visited electronically on the Society's award-winning web site. More than 170,000 visitors enjoyed the History Center's exhibits and over 30,000 researchers found what they were looking for in the Minnesota Historical Society Library. The web site's online store received more than 500,000 visits. The library's online services included more than 250,000 visits to the birth certificates page, more than 900,000 to the death certificates page and nearly 500,000 to the photo and art

database. More than 200,000 people checked out the calendar of events and nearly 3,000 e-cards were sent.

These statistics reflect the Society's broad mission, with its intent to reach a broad audience; it has a strategic goal to achieve an even greater inclusiveness, with accompanying efforts to reach newer communities in the state. All of the Society's programs and all of their audiences will be in a position to benefit from an expanded technological architecture. In particular, though, the program must focus on specific communities and constituencies in order to guide its choices about the available technologies. Those can be categorized either as audiences, those who will use digital content and services; or partners, those who will work with the Society to provide digital content and services. Both represent constituencies with which the Society should work.

The broadest audience to benefit from an increased technological capacity will be the citizens of the state and all researchers in the history of the Upper Midwest. The Society's web site supports thousands of visitor sessions every; the development of more content and more sophisticated tools to enhance the value of that content will certainly increase web traffic. What will transform the experience offered by the web site, though, is the addition of resources from other partners. Most researchers, whether tracking family histories, land use patterns or literary history, understand that their topics are not neatly bounded by arbitrary geographic, institutional and professional boundaries. Researchers want to cross those boundaries, in the simplest and most transparent means possible. Technology can realize that potential.

Managerial and governance capacity

Nina Archabal leads the Society along with a governing board, the Executive Council, which ably represents a range of constituencies and areas of expertise. The Council meets regularly, its work supplemented by a variety of committees that support and oversee particular functions such as development, finance, grants, and programs.

Day-to-day management of the institution's programs, services and finances is the work of a Management Committee composed of the Deputy Director for Programs Michael Fox; the Deputy Director for External Relations, a position currently open; Chief Financial Officer Chuck Irrgang; Director of Historic Sites and Museums Bill Keyes; and Director of Library, Publications and Collections Bob Horton. Others on the Management Committee are Director of Development Mark Haidet; Director of the Minnesota History Museum Dan Spock; Rose Sherman, Head of Web and Business Development; Pat Gaarder, Head of Human Resources; Lory Sutton, Head of Marketing and Communications; and David Kelliher, Government Relations Officer. The Management Committee meets with the director twice monthly.¹

Both the Council and the management committee fully support the determination to expand the Society's technological capacity as reflected in the Society's current strategic plan. As well, they understand the potential this project represents to transform what the organization does.

Financial management processes and results

A mix of funding streams supports the Society – appropriations from the state legislature, donations, earned income, grants and income from endowment. The Society has successfully addressed decreasing state support over the past five years by flattening its managerial structure,

re-allocating resources, re-evaluating and adjusting programs, introducing an admissions fee to the History Center Museum and expanding the number and ranges of its sources of support. While the process has been far from painless, the institution's programs remain robust, varied, and deep. Its core technical infrastructure remains largely intact though with substantially decreased capacity for new initiatives. Even in the midst of these cutbacks, the Society has consistently stayed within its budgets, without comments or concerns about its fiscal soundness or integrity noted in its annual audits.

The Society's current strategic plan recognizes that the percentage of state support in its overall revenue will probably follow a downward trend. As a result, the Society is moving to expand its Development Office, with the goal of increasing private support. As well, it is focusing on increasing attendance at the History Center and at historic sites, in order to improve revenues. As these steps indicate, the Society is serious about the need for innovation and transformation. The proposal to the Bush Foundation underscores the attention it is paying to its strategic orientation.

Planning processes and results

At the end of 2004, the Society completed a review and revision of its strategic plan. The plan recognizes that the institution will move forward by initiative, outlining a series of goals that will support the mission and inspire the programs. One goal explicitly addresses the significance of technology and the necessary development of an enhanced technological infrastructure:

VII. The Society shall utilize Web and emerging technologies, critical tools in delivering and expanding the reach of its collections, programs, and services.

Information technology has extended the Society's reach to people living in Minnesota and beyond in ways that were unimaginable even a decade ago. Providing web access to birth and death records and the development of the Visual Resources Database are significant achievements, but these efforts only scratch the surface of the possibilities that lie ahead.

Similarly, the plan calls for interpreting a critical and traditional function of the Society, collecting, in terms of new technology. One goal affirms that, stating:

II. The Society shall collect and care for materials that document human life in Minnesota, making them known and accessible to people in Minnesota and beyond.

The plan mentions an explicit action item in support of this second goal, namely: "Institute a web-based project to provide increased access to the Society's genealogical resources." The board committed the Society to raising \$250,000 over the next three years to support this work. The Division of Library, Publications and Collections and the Web and Business Development Department have drafted a business plan, under review by the Development Office, to accomplish this.² As these examples demonstrate, the Society understands the potential of technology to drive innovation across the full spectrum of its activities.³

Deputy Director Michael Fox has overall responsibility for evaluating progress towards the goals articulated in the strategic plan. For each goal in the strategic plan, program managers and senior management have identified specific initiatives with individual objectives, timelines for completion, metrics for evaluating success, assignments of responsibility and budgets. Progress on these objectives is tracked and regularly reported to the Society's Board.

PROJECT STRENGTH AND APPROPRIATENESS TO THE DEVELOPMENT FUND

Project impact on the applicant institution

The Society will experience the impact of this project in two ways: *first*, the project will knit together a series of technological initiatives that have often developed autonomously from separate programs and proposals, without a common framework to unite them. Such a framework will enable integrated and enhanced access to digital content so as to aid researchers to overcome the barriers of time and travel described previously. *Second*, the project will develop a new role for the Society, enabling it to function as a facilitator and intermediary in the creation and distribution of digital products and services in collaboration with different constituencies. This will transform the Society's potential, positioning it to become the leverage point in an array of technological efforts, from the local to the national level. Overall, with the Foundation's support, the Society will expand its technological infrastructure, creating tools and products that will enhance the value of its digital collections. This new infrastructure will expand the Society's capacity to manage, preserve and provide access to digital content. To create new content and to populate that infrastructure, the Society will use its own resources, work with a variety of partners with their own content and explore different sources of funds and support.

The Society begins the project with a rich set of existing content, for example:

- Visual Resources Database, with an index of 189,000 records and the associated images of 120,000 photographs and art works;
- PALS, the online library catalog, the guide to over 175,000 books and close to 100,000 cubic feet of manuscripts and government records;
- Collection Management System, with descriptions for over 230,000 items in the museum collections;
- Name indices, over 20,000 place names, a projected 1.75 million birth records and 2 million death records;
- Minnesota Greatest Generation reminiscences, with a planned 1000 stories; and
- close to 1000 EAD (Encoded Archival Description) formatted finding aids.

A common framework will knit these and other resources together, enhancing accessibility and increasing their value to researchers. The framework will comprise tools, standards, practices and skills sets. These would include:

- *federated searching* - web-accessible integrated searching of the Society's principal collection catalogs;⁴
- *full text searching* - integrated searching of and access to all the Society's research and informational databases;

- *data enrichment* – the application of data cleansing and normalization techniques to select sets of the Society’s digital content, as well as the creation and standardization of metadata;
- *usage statistics and measurements* – standardized reporting tools to measure the levels of use by and the satisfaction of patrons;
- *“my collections” tools* – support for the creation and preservation of online aggregates of content selected by patrons (e.g., photo albums, family histories, etc.); and
- *digital content standards and development guidelines* – definitions of appropriate practices that will ensure the creation of digital content and applications compatible with the common framework.

That common framework will provide tangible benefits, simply as an improvement on the status quo. Its real potential to the Society, though, is what it will make possible. It will greatly expand the technological capacity of the Society. From that perspective, it will complement and add value to a number of projects already planned or underway. The planned projects include:

- *digital content edit and entry tools* – to support the routine maintenance of digital content by subject matter experts, called for in the web and genealogy business plan;
- *user annotation tools* – to give the patrons the digital equivalent of “Post-it notes,” allowing them to mark and comment upon content of interest to them, also part of the web and genealogy business plan;
- *Minnesota Encyclopedia* – a joint print and online publication project, with a proposal for funding under consideration by the National Endowment for the Humanities; and
- *digitization of General Land Office field notes* – to make available the most comprehensive appraisal of the state’s landscape and environment prior to settlement, a project under discussion among representatives of the Society and a number of state offices and agencies.⁵

The projects already underway include:

- *digitization of vital records* – to provide access to 1.75 million birth records online, with funding from the Minnesota Department of Health;⁶
- *web interface to the collections management system* – to increase and enhance access to the Society’s database on its collections, principally three-dimensional and archaeological, already part of the Library Division FY2007 budget;
- *web-based geospatial data and applications* – to package digital content for a specific audiences, in collaboration with the Society’s education programs and the state’s K-12 teachers in support of Minnesota’s history and geography standards, currently supported by a project funded by the Institute for Museum and Library Services;⁷ and
- *preservation of legislative digital records* – a collaboration with the Minnesota and California Legislatures, along with the San Diego Supercomputer Center, funded by the National Historical Publications and Records Commission.⁸

In the process of implementing these specific projects, the Society will develop a more robust capacity to create, manage, and deliver information in multiple data types and formats, including:

- indexed records and databases
- images
- catalog records
- finding aids (EAD)
- XML and HTML files
- complex objects
- digital audio and video
- PDF files
- geospatial data

In addition to providing access to its own digital resources, the Society will support the work of other institutions. It will disseminate digital resources created by others; and it will serve as a gateway to digital resources created and maintained by others. This will not be easily achieved. In this project, the primary goal will be to define the thresholds for extension of these products and services to others, that is, to explore and articulate the capacities would-be partners will have to develop and sustain, along with the capacities that the Society will have to maintain reliably and effectively. To investigate these issues, two states, South Dakota and North Dakota, and four county historical societies, Anoka, Blue Earth, Nicollet and Olmsted, have agreed to collaborate with the Society. They will form an advisory board that reflects the interests, capabilities, and concerns of similar institutions in the region.⁹

After preliminary conversations, all agree that, after the definition of thresholds, the partners will work with the Society to select and test certain services. These have been provisionally identified as the most likely candidates:

- distributed access to data created in PastPerfect, a collections management application widely used in Minnesota;
- support for tools that provide integrated searches of data while preserving individual institutional identities;
- common e-commerce functions; and
- joint creation of additional digital content

Another potential key partner in this network may be the Minnesota Digital Library Consortium (MDLC) whose experiences have helped to inform planning for this proposal.¹⁰ Created in 2002, the MDLC is an informal alliance of libraries, archives and historical societies to create a "digital collection of the state's unique resources and special collections." The Society has been deeply involved in the project since its inception, serving on its Steering Committee, on the management team, conducted workshops, hosting its annual meetings, providing scanning services, testing software and providing overall management project services under contract. Its signature project is the Minnesota Reflections database, begun in 2004. This online database of about 6,000 images from smaller historical agencies in Minnesota has been funded by successive grants from the Minnesota Department of Education with federal LSTA funds

There are several possible future scenarios for the future of the MDLC and Minnesota Reflections beyond next year that are under discussion by its Steering Committee. Reflections may continue as a separate service managed by MINITEX. In that event, it will certainly become an important node on the Cultural Heritage Network. Alternatively, the MDLC may wish to

transfer responsibility for cultural heritage resources to the Society and focus its attention on the larger world of digital resources, possibly becoming a statewide gateway to born digital data like census and geospatial data. The Society and its partners will jointly decide which options to test in the second year of the project, with contingencies based on threshold capacities, sources of funding and the Society's ability to sustain the services.

To grasp this potential, the Society plans to develop a flexible technical architecture, allowing for improvement as the technologies change and evolve. It will be compatible with the developing national and international cyber infrastructure, as recently described in the *Draft Report of the American Council of Learned Societies' Commission on Cyberinfrastructure for Humanities and Social Sciences*.¹¹ The Society is already collaborating with efforts supported by other national institutions, such as the

- Library of Congress's National Digital Information and Infrastructure Preservation Program;
- National Archives' Electronic Records Archives; and
- San Diego Supercomputer Center's Grid Technology Network.

With this capacity developed and tested, the Society will be in a position to extend its technological services and products to external partners, supported by an outreach and education program to assess and promote best practices and standards. This is a new role for the Society, enabling it to function as a facilitator and intermediary in the creation and distribution of digital products and services in collaboration with different constituencies.

From the research and analysis done in preparation of this proposal, it is clear that there is a larger social value in having one institution acting as a clearinghouse of information and activities on a cyber infrastructure.¹² In that context, an institution assumes the responsibility to analyze and evaluate the myriad choices that the technology industry creates. As well, an institution assumes the responsibility to coordinate and integrate the creation of digital content, especially important as the scanning and content production is more and more done through the equivalent of cottage industries, at many different institutions, at all levels of ability. The leverage point for enhancing content creation and the development of grant proposals would be the opportunity to aggregate data in a network that would increase the potential exposure and use value of any data set, while supporting an array of standard tools and applications that would enhance the value of data in a cost-effective and efficient manner.

Overall, the project will serve as a catalyst to transform the Society, giving it the capacity to be as innovative in the 21st as it has been in the 20th century. As the Society develops its resources and products, it will expand the range of the skills and technologies available to support the work and manage the resources of other partners. In the process, the Society will move from being simply the primary actor in its programs to becoming the primary collaborator and facilitator in the development of communities of users and of knowledge. This will position the Society to be the necessary partner in the technology projects knitting together a statewide, regional and national cyber infrastructure for cultural heritage constituencies.

Planning for the Project

As noted, the Society recently concluded a review and revision of its strategic plan. In the process, it specifically addressed the potential of technology, calling our current programs

"significant achievements" but observed "these efforts only scratch the surface of the possibilities that lie ahead." To explore those possibilities, the Society undertook an analysis of its current operations in concert with three outside experts, Daniel Greenstein, Director of the California Digital Library (CDL), Roy Rosenzweig, Director of the Center for History and New Media (CHNM) at George Mason University, and Sean Fox, of the Science Education Resource Center at Carleton College.¹³ The Society supported and extended those consultations with research, in-house evaluations of its programs and a daylong meeting and discussion with the partners in the proposal, as well as the two-day workshop at the CDL.

The analysis concluded that the Society had reached the limits of what it could hope to achieve with technology using its available resources. While it had successfully managed to transform certain functions, as with the implementation of a collections management system, and had created a variety of extremely popular web-based resources, such as the visual resources database and death records index, the Society did not have the capacity to employ the increasingly more sophisticated technologies now becoming available without a substantial investment. It could only play a limited role in the development of the national cyber infrastructure. It had to appraise rigorously the increasingly routine demands of its programs for technological support. It could not fully meet the needs of its constituencies in the region for education and collaboration.

The Society gleaned several lessons from its partnership in the Minnesota Digital Library Consortium. The most significant have been the interest on the part of smaller historical societies in being able to make their collections available on the web and the public interest in accessing those materials. But local institutions also wish to retain a high degree of control over their assets and have been reluctant to contribute data to a central repository. Project expenses are relatively high when virtually all aspects of production and delivery (and the associated costs) are borne centrally. Such centralization creates products, but does not build the local capacity essential for sustaining such a service (over half the institutions participating in the MDLC's first grant were not able to continue in the second). On the other hand, some larger centers have the capacity and desire to create their own web presence and avoid the duplication of effort inherent in maintaining local and central delivery systems.

This proposal relies on some assumptions about the potential of online digital content, based on the research and analysis done in preparation for the proposal. These are basically that a critical mass of content is essential to attract users, that the value of content is enhanced by tools designed for specific audiences and that the tools and their corresponding packages should be designed for their cost-effective re-use for other audiences.¹⁴

Preliminary research also revealed, however, a real challenge. These efforts require not just the development of the content and tools, but also, to a significant extent, the development of the communities and constituencies that will use them. In some of the areas targeted for development, such as some of the smaller cultural heritage institutions and repositories, neither the demand for the use of advanced technology or the capacity to use it is readily formed. As a result, the Society and its partners will have to use educational and outreach programs to develop a customer base. Similarly, some of the audiences for the digital content are more prepared than others to use online products and services. Family historians have readily taken to the use of the Web and are well equipped to take advantage of what the Society might offer. For other groups, however, such as K-12 teachers, the Society will have to move more slowly, with the aid of focus groups, surveys and usability studies built on its existing educational outreach programs.

There is an internal challenge as well. Within the Society, individual departments and programs have played the primary role in the identification and development of digital content and technological programs. As a result, there are some “silos” of applications, procedures and data that have to be addressed in the course of the project. Over the entire enterprise, the Society has to develop more central services and standard procedures that cut across projects and programs. That sort of formalization can sometimes come at the cost of flexibility and innovation, but the consequent centralization will also support the development of advanced skill sets and broad experience in staff available to a multiplicity of projects. That, in turn, will support the sustainability of the overall program, as well as the maintenance of best standards and practices, as defined at the national and international levels.

That will demand some overall management and review. The process is already underway. In particular, the Society’s Library, Publications and Collections Division and Web and Business Development Department have drafted a business plan for developing products and services for family historians and has begun the process of developing a new strategic and operational plan for the division as a whole. The plan will inform the development of departmental and individual work plans within the Division. The ideas articulated in this proposal will be an integral part of the planning process. These plans will inform and be incorporated into the ongoing planning efforts of the Society as a whole.

Project work plan

The Society will move forward in a phased, incremental manner, beginning with its own infrastructure, developing products and services on a standardized technical architecture and using a standardized toolkit. Once the Society establishes a solid infrastructure, it will build out, inviting other organizations to use the tools it provides and layer their digital content on the Society’s grid to form a regional network. These organizations will experience lower start-up costs to connect to a technical infrastructure and so could concentrate their efforts and resources on the development of digital content.¹⁵ See Appendix VI for a detailed project timeline.

The *first phase* of the project will entail preparation. The tasks will include: hiring staff, forming an advisory committee, establishing the project web site and scheduling initial meetings. The meetings will include the advisory committee and the project partners. The former will meet annually, while the latter will be involved on a more frequent basis, as their input and review is necessary at every phase of the effort. Bob Horton and Jason Roy will have the primary responsibilities for managing these activities, with Rose Sherman playing the lead role in hiring staff.

In the *second phase*, the focus is on the development of the common framework. The tasks include the creation and implementation of the critical tools to enhance the value of the Society’s digital content. The tools will include: federated searching, full text searching, data enrichment and “my collections” tools. In the course of this phase, the staff will also start the definition of digital content standards. Rose Sherman and her staff will lead the development of the tools. Jason Roy, with staff of the Library, Publications and Collections Division, will manage the definition of content standards. The two teams will collaborate closely in the effort, facilitated by Michael Fox and Bob Horton.

As that infrastructure enters into place, the Society will begin to integrate the products, standards and services with its related technology projects. This is the *third phase* of the project. One specific focus will be coordination with the web and genealogy business plan, with its

products, such as the digital content edit and entry tools and the user annotation tools. Rose Sherman and Jason Roy will manage this. Another area of focus will be with the ongoing geospatial data projects, including the IMLS funded Geography and History Online Project and the proposed field note digitization project. This will engage the project closely with two important communities: K-12 teachers and GIS specialists. Bob Horton will take the lead here. All the staff will continue their work with related projects and programs on the national level.

Phase four analyzes the extension of services to the project partners. The emphasis is on the audience analysis and needs assessment necessary for closer collaboration. To support this collaboration, the program will include an education and outreach function, to raise the level of understanding and the technological capacity of the potential partners, as well as to determine a consensus on technology architecture and standards. The function will build on what the Society has already done for scanning and metadata workshops for the MDLC project, expanding these to encompass the definitions of thresholds for partnerships. This phase will extend through most of the second and third years of the grant. The exact parameters of the actual pilot will depend on two contingencies, determining whether it will scale up or down. The pilot will be more ambitious, if the Society can secure funding from an additional source, and if it can establish at a relatively sophisticated level a consensus on thresholds with the partners. Bob Horton will be the lead manager in this area.

Phase five, evaluation and assessment, is an ongoing feature throughout the project. Michael Fox will oversee this, integrating the specific responsibilities of the project and its phases into the routine of performance measurement at the Society. The Society will engage a consultant to help define the criteria for assessment at the start of the project.

The *sixth and final phase* moves the project beyond the period of the grant. The focus there will be on sustaining the program with non-grant funding. The planning for this will be ongoing throughout the grant period. Nina Archabal and Michael Fox will take the lead here.

Managerial capacity and board ownership

The Society will commit considerable staff resources and expertise to this project. The leadership includes: Michael Fox, Deputy Director, Rose Sherman, Head of Web and Business Development, Jason Roy, Central Collections Services Manager and Bob Horton, Director, Library, Publications and Collections Division. They provide an extraordinary foundation of experience.

Michael Fox is Deputy Director for Programs. With 33 years experience in the library, archives and museum programs of two major cultural heritage institutions, the historical societies of Wisconsin and Minnesota, and regular contact as consultant with a range of large and small cultural heritage organizations, he brings to the project significant expertise in the nature of the collections and types of information held by such repositories as well as an understanding of the organizational issues in this sector. As an internationally recognized leader in the development of systems and standards for the description and discovery of historical research collections, he understands the problems faced by both researchers and the professionals who work to facilitate resource discovery. As a teacher and instructor, he has extensive technical knowledge of relevant protocols, standards, and technologies such as XML, XSLT, MARC, and relational databases. With 25 years of increasingly complex managerial leadership, he is fully capable of directing an undertaking of this scale and complexity.

Rose Sherman is the head of Web and Business Development. Under her leadership, the *mnhs.org* web site was redesigned to be more customer focused, and more than 20 database driven web sites have been developed - most notably the online indexes to birth and death certificates, the award winning Duluth Lynchings Online Resource, the online National Register of Historic Places, and the e-commerce system. Before coming to the Society in 1999, Sherman worked at 3M for more than 17 years in positions of increasing responsibility in International IT, Strategic IT Planning, 3M Canada, 3M Caribbean Region, and business unit IT management. She has significant experience in business process re-engineering, application development and delivering positive ROI for IT investments.

Jason Roy is currently the Central Collections Services Manager for the Society. In this capacity he has developed and managed a number of online initiatives and collections delivery tools, including: the Visual Resources Database, the Birth Records Online Index and the Duluth Lynchings Online Resource. During the past few years, Roy has participated on the steering committee of the Minnesota Digital Library Coalition and the metadata sub-committee of the Collaborative Digitization Program. He is regularly asked to speak on the topic of digital project management at conferences and workshops throughout the state and region. In addition, Roy also manages the Society's collections management system and the Registrar's office.

Bob Horton is State Archivist and Director of the Library, Publications and Collections Division. Before coming to Minnesota in 1997, he was head of the electronic records and records management programs at the Indiana Commission on Public Records. During the past few years, Horton has worked primarily on information technology projects, including the State of Minnesota's Electronic Real Estate Recording Task Force; the San Diego Supercomputer Center's Archivists' Workbench and Persistent Archives Testbed projects; and the Digital Library at the University of California San Francisco's Center for Tobacco Control, Research and Education. He has written symposium papers on e-government for the National Electronic Commerce Coordinating Council in 2003, 2004 and 2005. Currently, he is directing the E-legislature project, funded by the National Historical Publications and Records Commission, and Geography and History Online project, funded by the Institute for Museum and Library Services.

To monitor the progress of the program, the Society will appoint an expert advisory committee that will guide the Society's staff members in the evaluation of institutional and technological opportunities. The committee will consist of representatives of regional and national programs, with expertise in digital libraries, archives and web technology, as well as representatives of particular constituencies, such as academia, family historians and government. The Society will call initially on individuals with whom it has consulted in the course of the project. The committee will meet annually, with its activities supported by a listserv and project web site.

Similarly, the project partners will form another advisory group. That will meet annually in conjunction with the expert advisory committee, but separately as well; since the members represent potential partners in components of the project, they will have more to evaluate, especially in the latter half of the effort. The partners' work will also be supported by a listserv and the project web site.

Both boards will complement the ongoing activities of Society staff members who monitor and analyze trends and opportunities in information technology. There are certain areas of particular interest: potential collaborations; additional sources of funding; advances in open source software; developments in the area of intellectual property rights; and audience and needs analyses. As these are concerns, broadly speaking, of virtually every digital library project, there

will be ample opportunity to learn from what other institutions do and learn. Society staff members are already part of many collaborative efforts and currently play a notable role in professional activities; they are well placed to keep abreast of any developments.

The Society's Executive Council, particularly through its Programs Committee, will monitor and review progress as well.

Sustainability

Sustainability of this initiative beyond the three years of the grant will largely be a function of the demonstration of value: the Society and its partners will have to show a clear return on the investment in this project to warrant continued support. In the process, there are two business cases to consider.

The first is that this undertaking will create a significant public good. That echoes the Society's mission. By extending its range of programs and functions to include the advantages offered by information technology, the Society will continue to meet and exceed the expectations of its constituencies, by making its products and services readily available online.

The Society can then extend those services to external partners, broadening the value of its technological capacity and sustaining the project by sharing overhead costs through collaborations with other institutions. By building a common framework and increasing its capacity, to support technology projects, the Society can become the necessary partner for other institutions working with digital content. By collaborating with the Society, they can enjoy the benefits of an advanced technological infrastructure and focus their efforts on their own areas of expertise and need. In terms of requesting additional grants and other types of financial support, that potential for cooperation lowers both costs and risks for potential funders.

To realize that potential, the collaboration and particularly the contribution of digital content will be "as easy as possible," but the contributors must meet the Society halfway. As noted, this depends on the practical definition of thresholds for participation, with the appropriate tools and educational mechanisms to explain them. The definitions of thresholds encompass organizational, technological and conceptual issues, e.g., such as standards for data formats and intellectual property rights. To sustain this, the Society will create the necessary tools in this project, then support them in the routine of its outreach program, that already provides regular workshops for local and county historical societies, as well as online resources and specialized help. Its ongoing activities can easily supplement the work of the project.

The second business case involves the economies and efficiencies gained by the application of technology to both new and routine functions. For example, by becoming a service provider and offering its partners the capacity to make content available online, the Society will enable its partners to make the best and most efficient use of a technological infrastructure, without the duplication of basic costs and investments, allowing each partner to focus on its specialties. As a result, a county historical society can concentrate on selecting and preparing its content for digitization rather than building an entire suite of services to support its content online and incurring the short and long terms costs of developing and maintaining that infrastructure.

In this larger, "enterprise-wide" context, the Society can sustain the program through a combination of strategies: 1) additional legislative appropriations and private or grant funding; 2) realizing internal efficiencies and re-allocating funds; and 3) increasing revenues. These are all approaches that the Society is exploring on a broad level already.

The Society anticipates seeking state legislative support in two ways. First there will be a request for support necessary to sustain the centralized components of the project at a level to be determined during the course of the first two years. The justification is that the additional, centralized technological capacity will make things possible for smaller institutions that will otherwise not be able to provide these capacities for themselves. This increased technological capacity will form the basis for a second request for enhanced support for the Society's existing state-funded re-grant program, which would provide monies for local and county historical societies to create digital content. The Society will also seek funding through the National Historical Publications and Records Commission for federal regrant funds to supplement the existing state program. These efforts are all a natural extension of the Society's long-standing outreach function to provide support to local historical societies across the state.

Simultaneously, the Society could spread the costs of maintaining the infrastructure across multiple projects, as additional technological capacity will position the Society to take advantage of many opportunities. There are multiple sources of potential funding: federal agencies are increasingly supporting proposals to create and populate the national cyber infrastructure; state agencies have an increasing need for digital content and are increasingly creating digital content that is of interest to the Society's patrons; and the Society's patrons support projects through donations and fees for services. The Society intends to explore all of these fully, both on its own and in collaboration with other institutions, to get a full return on the investment from the Bush Foundation.

Internally, the Society will need to capture the efficiencies of a common framework, which will require some re-allocation of resources. The Society has already underway a number of separate projects that will complement this effort; in its future plans, it will routinely calculate the costs necessary to support the common framework's overhead and include that factor among the elements of project budgets. For example, the digital preservation function is explored in the E-Legislature project, with the financial support of the National Historical Publications and Records Commission, in collaboration with the Minnesota and California legislatures and the San Diego Supercomputer Center. Similarly, the Geography and History Online project, funded by the Institute for Museum and Library Services, is exploring closer work with a specific audience through the use of web-based applications, providing geospatial data to K-12 teachers.¹⁶

Finally, the Society expects to increase certain revenues through this project. With the new tools to enhance access to digital content, patrons should find more material and many of them will then order copies, whether of vital records, photographs or texts. The Society may also determine, through its discussions with partners, the fees for services that are appropriate to support certain functions; at the January meeting, for example, the partners expressed a great interest in the possibility of the Society hosting a common e-commerce application to facilitate the online sales of reproductions.

The Society does not expect, though, to emphasize the use of fee-based services as the primary method for sustaining its development of the underlying common technological framework. As noted above, the first business case is the support of public services. The Society foresees that this will lead to an increase in membership – it is probable that the increase in content will keep attracting users and various forms of support to support the particular projects that build on the core infrastructure.

Impact of Bush funding on the project's success

For a variety of reasons, all in parallel to the general social trends favoring the widespread adoption of technology, the Society will inevitably move in the directions outlined in this proposal. Its strategic plan makes technology a priority; the momentum on the national level, evidenced in a number of efforts, inspires the Society as well. In addition, the Society is preparing plans for projects and there are projects already underway that comprise elements of this proposal.

Funding from the Bush Foundation, however, will lift the Society to another level, moving it higher and faster than it could move on its own. It will act as a catalyst, as a capital investment, for more efficient and more focused efforts. It will allow the Society to extend rapidly products and capacities to other partners. And it will position the Society to become the necessary partner in the development of digital infrastructure projects. The last is particularly important as the pace of development quickens in other institutions. There will be a wide variety of opportunities available in the next few years, funded by the Library of Congress, the Institute of Museum and Library Services and the National Science Foundation, to name only the federal funders. It will be to the advantage of the Society, its constituents and the state to have a Minnesota entity ready and capable to take part in these efforts.

The outcomes will give the Society's constituents and patrons integrated digital content delivery, allowing them to find, not just search for what they need online. And they will give the Society an expanded role in national standards development, at the same time making it a regional service provider whose mission truly extends beyond the wall of the institution. The last point builds on previous outreach work to build the capacity of other institutions through professional and technical support of our outreach staff and on efforts to decentralize the preservation of resources, first through the regional network agreements and more recently through the state archives' support for keeping local government records locally. Together, this will better position the Society to develop sustainable funding sources, with the legislature, private donors and its own sales of goods and services. At the same time, the Society's partners will get greater public exposure for their collections, thereby enhancing the value of what they do while increasing their capacity to benefit from technology.

Bush Foundation support will have another impact by validating for the Society's staff and for other external partners the value of the Society's plans for increasing technological capacity. As staff members encounter the challenges associated with change and transformation (the need to develop new skills, to form new partnerships, and to reallocate funds within the organization), they will be buoyed by the confirming successes this project will bring.

To meet these challenges, the Society is already meeting regularly with its directors and staff to explain the proposal and walk through its implications, one of which is the prospect of training needed to develop different areas of expertise. The State Archives and Collections functions have long devoted considerable resources to staff development and education. The Division of Library, Publications and Collections is devoting time and resources to furthering the technological capacities of its staff, especially in collaboration with Web and Business Development. The work done in preparation for this proposal is one example. Another example of such innovation is the position description for the Head of the Collections Development, to be advertised in March. This will stress, beyond a demonstration of subject matter expertise, proven experience with project management, the implementation of technology, collaboration with development and grant writing.

The project budget includes supplemental funding for staff education and professional development. All in all, the Society fully recognizes that transformation is only possible with the active and willing support of the staff. Communication, education and cooperation are key to the accomplishment.

Evaluative criteria

In the two-day workshop arranged by the California Digital Library (CDL) during January, the Society's project staff very carefully considered the question of evaluating results. The CDL defined four steps in its assessments process. This encompasses determining evaluation needs in the planning phase of a project; supporting evaluation with the collection of the appropriate data; realizing evaluation through careful analysis; and acting on evaluation through communication to the program and project staff.

The Society is prepared to implement all four elements in this project, building on the framework of what it already routinely does to monitor the performance of its programs. In this instance, the initial determination is that it will measure success in these ways:

- *increased usage of web based resources* – raw statistics of users and visits, with usability and audience surveys
- *increased revenues* – measurements of e-commerce products and services
- *additional grants to create digital content* – selling the capacity to other funding sources
- *extension of products and services to partners* – giving other entities these capacities
- *connection to national cyber infrastructure projects* – becoming the regional partner in larger networks.

Each of these is measurable, both quantitatively and qualitatively. Overall, these assessments will be linked to the ongoing program evaluation and review of the strategic plan managed by Deputy Director Michael Fox. They will also be encompassed in the development of a new operational plan for the Library, Publications and Collections Division; the planning effort is already in progress. During the course of this project, the staff will compile the appropriate measurements of performance and report on them regularly. As noted above, Michael Fox, deputy director, is responsible for performance measurement. Virtually every component of the Society's strategic plan demands careful evaluation; this project will fit into that framework.

The success of the project will depend not just on evaluating progress over three years, but on building a mechanism for evaluation and measurement into the Society's overall routine. To a significant extent, this capacity will mark the degree of transformation the project inspires. With an emphasis on partnerships, on audiences, on the opportunistic pursuit of additional funding and on the consequent internal re-allocations of staff and resources required, evaluation will be at the core of the Society's everyday work. In that sense, this project truly will affect the institution at every level.

Endnotes

¹ The Society's organization chart is attached in Appendix I.

² A copy of the draft genealogy business plan is attached in Appendix II.

³ The key initiatives relating to technology objectives are:

- the completion of an online index to 1.75 million birth records in Minnesota for the period 1900-1934 (FY06);
- scanning those same records and making non-certified copies available for purchase online through our e-commerce store (FY06);
- building a database of reminiscences of the lives Minnesota's greatest generation during the years between 1930 and 1960 with online submission of stories and full-text retrieval of their content (FY06);
- online access to descriptive metadata and images of at least 10,000 objects in the Society's museum collections (FY07);
- integrated searching of our major collections databases, one of the objectives of this project; and
- the series of projects that will generate specialized databases and other content of interest to family historians (FY09).

⁴ See Appendix III for a conceptual model of the common framework for federated searching.

⁵ This is a continuation of the collaboration that produced *Minnesota Maps Online*, at <http://www.mnhs.org/collections/digitalmaps/index.htm>.

⁶ The Society makes the records available online as they are scanned and indexed. The site's address is <http://people.mnhs.org/bci>.

⁷ The project is described online at <http://www.mnhs.org/preserve/records/geographyonline/main.htm>.

⁸ For more information, visit the project web site:

<http://www.mnhs.org/preserve/records/elegislature/elegislature.htm>.

⁹ Please see Appendix IV for a list of partners and their letters of support.

¹⁰ The Society has also realized the limited scope of the Reflections project and in particular the software application underlying it (CONTENTdm). While a useful turnkey system for photograph collections, it does not support the numerous types of content created locally, especially those that offer unique content and value such as locally produced indexes and databases and locally held textual files (manuscripts, printed ephemera, vertical file material). The varied nature of such data types and their electronic manifestations make it difficult to conceive of a single centralized data collection and delivery system that would support their delivery without a level of standardization that is inconceivable among such partners. This argues persuasively for an access model that supports many more and different types of material and one that is broader from Minnesota Reflections, namely a decentralized approach that features federated searching of locally created, owned, and maintained resources.

¹¹ http://www.acls.org/cyberinfrastructure/cyber_report.htm

¹² Among other efforts, staff members enjoyed the benefit of a two day workshop at the California Digital Library in January 2006. See Appendix V for a copy of the agenda and a list of participants.

¹³ For more on these consultants and their programs, visit: <http://www.cdlib.org>; <http://chnm.gmu.edu>; and <http://serc.carleton.edu>.

¹⁴ See, for example, the web archives documenting the impacts of 9/11 and Katrina developed at the CHNM.

¹⁵ See Appendix VI for a timeline of the project and its products. There are further details in the project budget and the annotations of the budget, in Appendix VII.

¹⁶ See the project web sites for details: <http://www.mnhs.org/preserve/records/elegislature/elegislature.htm> and <http://www.mnhs.org/preserve/records/geographyonline/main.htm>.