Sample Application

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Building Digital Resources

George Mason University
Center for History and New Media
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OMEKA: A Free, Open-source, Standards-Based, Easy-to-Use Web Publishing Platform to Bring History and Heritage Museums into the Era of Web 2.0

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Abstract

Omeka— A Free, Open-source, Standards-Based, Easy-to-Use Web Publishing Platform to Bring History and Heritage Museums into the Era of Web 2.0

The Center for History and New Media (CHNM) at George Mason University will develop *Omeka* <http://www.omeka.org/>—from the Swahili word meaning "to display" or "to lay out for discussion"—as a next-generation web publishing platform for smaller history museums, historical societies, and historic sites. For too long, quality web publishing has been out of reach for smaller history museums, and existing digital tools are not adequate to the key needs we have identified, especially because these tools focus more on digital collections management rather than web publishing. We believe *Omeka* will do for this important constituency what blog software has done for ordinary web surfers—offer an easy, professional, and state-of-the-art way to display their content online.

Beginning in October 2007, CHNM will plan, design, test, evaluate, and disseminate *Omeka* over four phases while working closely with our major partner, the Minnesota Historical Society (MHS). MHS represents a wide museum network and a broad range of history and heritage institutions of different sizes, audiences, and subject area interests. *Omeka*'s initial dissemination in September 2009 will be done through MHS with additional help from the National Air and Space Museum and the Smithsonian Affiliations and their national networks. And we will disseminate to other small museums through conference presentations, direct mailings, and the *Omeka* website. *Omeka* will benefit small history museums, historical societies, and historic sites in three ways:

Goal 1. Enable museums to publish web content with a system that is low-cost and easy-to-use. *Major Activities:* Since many history and cultural heritage museums publish limited web content because they lack trained staff and sufficient budgets to manage a professional online presence, CHNM will release *Omeka* as a free and open-source system that will be fully documented and easy to use for staff with little technical experience, allowing museums to increase their online presence without adding to their budgets.
Anticipated Impact: Many more museums will be able to mount well-designed, professional-looking, and content-rich web sites, and those institutions can focus their constrained budgets on what they do well—historical preservation and interpretation and public education and outreach.

Goal 2. Provide museums a with standards-based, interoperable system that allows them to share and use digital content in multiple contexts. *Major Activities:* Because many museum sites do not conform to basic metadata standards and do not meet accessibility guidelines, making collection sharing impossible and because digital objects are often stuck in isolated digital frameworks, CHNM will design *Omeka* to be fully standards-based, both with regard to object metadata and to design interface, and to be extensible and interoperable with existing collections systems.
Anticipated Impact: Omeka will allow museums to use materials for multiple contexts without redundant data entry and to share collections with other institutions, without being locked into particular vendors or platforms. As a result, *Omeka* will help small museums design online exhibitions more efficiently.

Goal 3. Facilitate museums in engaging their publics and building communities around objects. *Major Activities*: *Omeka* will include basic Web 2.0 features such as an RSS feed and a tag cloud, and CHMN will provide a set of Web 2.0 plugins for the basic *Omeka* system, such as a "My Archive" plug-in, a Google Map plug-in, a Flickr plug-in, and a timeline plug-in that will allow visitors to have a greater participatory experience with a museum's digital assets.
Anticipated Impact: *Omeka* brings Web 2.0 technologies and approaches to museum websites—fostering the kind of user interaction and participation that are central to the museum mission that audiences are coming to expect. Interactive and participatory systems serve the larger needs of museums by engaging publics in thinking actively about the past, by building more regular interaction with a base of active museum visitors, and by encouraging democratic participation in collecting, preserving, and interpreting the past.

Narrative

Omeka— A Free, Open-source, Standards-Based, Easy-to-Use Web Publishing Platform to Bring History and Heritage Museums into the Era of Web 2.0

Overview

In the past year, technologists and journalists have repeatedly celebrated the possibilities of "Web 2.0"—second-generation Internet services such as YouTube, Flickr, MySpace, and blogs that emphasize online collaboration and sharing. Yet many museums, especially less-well-funded history and cultural heritage sites, have still not fully made the transition to the *first* generation of the Web. Although virtually every history museum now has a website, very few have realized the promise of the Web to engage their publics and build online communities around museum collections. Creating websites remains a burden for over-taxed and under-funded museums. As a result, few have the kind of deep and professional web presence that the public expects today.

Bringing smaller history museums into the era of Web 2.0 requires an easy-to-use inexpensive web publishing platform designed with their needs in mind. We are building *Omeka* (from the Swahili word meaning "to display" or "to lay out for discussion") to satisfy those requirements, and we believe it will do for smaller museums what blog software has done for ordinary web surfers—offer an easy and professional way to publish content online.

Before blogs, most personal web pages were infrequently updated, poorly constructed and ugly (filled with garish colors and slow-to-load graphics). The creators of these primitive websites needed to learn either HTML or a specialized program such as Dreamweaver just to achieve often disappointing results. The advent of blogging packages solved this publishing problem: in a manner of minutes, an individual can launch and maintain a professional looking and easy-to-navigate blog. The outcome was an avalanche of web publishing and creativity; today, more than 60 million people maintain blogs.[1] (*Notes are in Appendix A.*)

- ***Omeka*** is a next-generation web publishing platform for museums
- ***Omeka*** is free, open source, and offers low installation and maintenance costs—appealing to smaller museums that lack technical staffs and large budgets
- ***Omeka*** is standards based, extensible, and interoperable—insuring compliance with accessibility guidelines and integration with existing digital collections systems to design online exhibitions more efficiently
- ***Omeka*** brings Web 2.0 technologies and approaches to museum websites—fostering the kind of user interaction and participation that are central to the museum mission

Blogging packages focus largely on presenting prose in chronological succession, and, thus, do not satisfy the needs of museums to present objects with metadata as part of interpretive exhibits, to create educational resources, and to actively engage diverse users with the collections and staff of the museum. What is needed, instead, is a museum web-publishing platform that is *like* blogging software in its simplicity and ability to syndicate and share content, but that incorporates museum requirements. The Center for History and New Media (CHNM) at George Mason University is creating *Omeka* to satisfy this need.

I. Assessment of Need

CHNM's assessment of the need for *Omeka* rests on more than a dozen years of work in new media, the creation of more than four dozen web-based projects, work with more than a dozen museums, discussions with our museum partners on this project, our review of the museum literature, and our own recent survey of museum professionals. Based on that assessment, we have identified three major needs that shape our work on this project:

1. Museums need low-cost and easy-to-use systems for publishing web content.

Many history and cultural heritage museums publish limited web content because they lack trained staff and sufficient budgets to manage a professional online presence. The most recent survey from the Institute of Museums and Library Services (IMLS) indicates that the biggest hindrances to museum-based online activities are lack of staff time and funding. Almost two-thirds of all museums say they do not have sufficient skilled staff to accomplish their technology goals. A 2005 Archives and Museum Informatics survey found that two-thirds of museums had fewer than two full-time staff devoted to web activities. Even those museums with a separate IT department find that the technical staff lacks the time or expertise to work with curators on content development. Museum professionals

that we surveyed said they need museum-centered web publishing tools that are easy to use and demand little technical support. In a recent exchange on Minnesota's Local History Blog, Mary Warner of the Morrison County Historical Society noted how lack of staff, IT expertise, and funding hindered online efforts by small and regional history museums. Suzanne Fischer of the Hennepin County Medical Center History Museum agreed, noting that museums are behind in terms of technology and that many existing tools have a "steep" learning curve. Museum professionals want a "turn-key" solution that requires little or no installation and entails limited maintenance and support costs.[2]

Lack of staff, expertise, and budget often means that museums provide little substantive content and instead limit their websites to "brochureware." A separate unpublished 2004 survey of 85 history museums carried out by our staff found that half offered only brief descriptions of their exhibits and another 40 percent provided absolutely no collections information—not even a summary of their collections for interested visitors. The problem is worse for smaller institutions. More than one-fifth of small museums surveyed by IMLS still had no website; more than three fifths lacked a computerized collections management system. The IMLS report concludes that "small museums . . . have made dramatic progress . . . [but] they still lag behind their larger counterparts." Even the Winterthur Museum and Country Estate—a well-endowed leader in the museum world—lacks a program to build web pages and exhibitions. Their webmaster hand codes each web page; he calls for "efficient, flexible software" to better serve online visitors.[3]

2. Museums need standards-based, interoperable systems that allow them to share and use digital content in multiple contexts.

All the museum professionals we recently surveyed asked for standards-based web publishing tools. But with many museums designing their online content by hand with general-purpose web software, most sites do not conform to basic metadata standards, such as Dublin Core, making Open Archive Initiative (OAI)-enabled collection sharing impossible and resulting in sites that do not meet accessibility guidelines. A survey of IMLS National Leadership Grant projects found fewer than a quarter of funded projects are OAI-enabled.[4] Although not all institutions seek to federate collections, museums need to be able to access their digital content in a non-proprietary system that conforms to best practices in the field. Without this type of standards-based system, museums confront the all-too-common problem of digital objects stuck in isolated digital frameworks, limiting their flexibility and frustrating visitors. For example, even the National Air and Space Museum's website—one of the most popular history museum sites on the web—only offers exhibits designed either in static HTML pages or closed, proprietary formats like Adobe Flash. Creating a new exhibit that might combine elements from existing sites means starting over from scratch. Moreover, internal search engines cannot find things located within exhibits encased in propriety software wrappers.[5]

3. Museums need systems that allow them to engage their publics and build communities around objects.

Museum professionals recognize that their visitors are demanding a different type of online interaction shaped by Web 2.0 but are unsure how to provide it. A recent paper given at the Museum and the Web Conference reports that visitors are "already defining museum-related content in Web 2.0 through their own text and photo blogs," and the Pew Internet and American Life Project finds 28 percent of web surfers tag objects with keywords on sites such as flickr.com and del.icio.us. Yet while some museums are experimenting with blog and podcasts, most are still "playing catch-up with a significant segment of our audience," as one museum leader notes. Only a tiny number of museums currently offer their content through RSS, the "Really Simple Syndication" standard widely used with blogs to distribute newly updated digital content. Without RSS feeds on their sites, museums will never tap into the emerging culture of sharing that characterizes Web 2.0. Creating such an online environment would facilitate the shift in museums from sites of authority, limited in range and reach, to sites of mutuality where the public and cultural partnerships inform and influence the mission and identity of institutions and collections, as scholars such as Eilean Hooper-Greenhill and Michael Frisch have urged. Museums need to follow the lead of libraries, which have begun to move from OPACs (Online Public Access Catalogs) to SOPACs—sets of social networking tools layered on top of the catalog that give users the ability to rate, review, comment-on, and tag items. Almost all the museums we surveyed want a system that allows them to interact with the public in new ways, such as engaging in online conversations and commenting, or by collecting digital objects from visitors. [6]

Existing systems and tools do not meet the needs of smaller history and heritage museums

A number of digital tools have, of course, been developed—some with museums explicitly in mind; others directed at different audiences but adapted by museums—that respond to some of the needs outlined above. But our research and experience indicates that the existing digital tools are not adequate to the key needs we have identified, especially because most of them focus more on digital *collections management* rather than web *publishing*.

Professional digital asset management packages emerging from the world of digital archives and libraries offer robust databases that conform to metadata standards, but the most widely used of these packages lack capabilities for publishing narrative exhibits and, hence, are not being used by museums. For example, Greenstone-powered sites such as the New York Botanical Garden are well suited to the needs of committed researchers, but they would not appeal to students or casual visitors. Other systems—such as CONTENTdm and Streetprint—advertise web publishing features but remain oriented toward the librarian's or scholar's need to catalog textual materials rather than the museum professional's need to build public exhibits around artifacts. Only one museum we surveyed uses CONTENTdm, and they only find it useful for posting online images, not for building "online exhibitions or anything we consider as such." None of the highlighted collections listed at streetprint.org or at Greenstone.org contain museum objects or are hosted by museums.[7]

Some museum-focused collections management systems, such as Mimsy, The Museum System, and Ke Emu, offer bridge programs that convert collections files to online collections content. But these systems generally cost more than smaller institutions can afford. For example, The Museum System's EMuseum costs approximately $10,000 per installation plus another $3,000 per year for maintenance, and requires technical staff to install and customize the program. Even those museums that can afford these systems say that they work well for creating online catalogs of objects but not for publishing those objects as narrative exhibits or educational resources. The Smithsonian's National Air and Space Museum, for instance, uses E-Museum, but finds that it does not allow curators to create web content beyond basic object descriptions. Less expensive museum-focused systems exist, but they also lack adequate publishing capabilities. The system most widely purchased by smaller history museums, Past Perfect, includes an inexpensive and popular collections management tool. But its online components, Virtual Exhibit and Past Perfect Online, offer only limited capability for creating online exhibits, and the sites they create consist of flat HTML pages with out-of-date coding and design.[8]

Three alternatives, still in development (and hence not yet fully available), appear to avoid some problems of large proprietary software packages and produce more appealing exhibits than Past Perfect. But each of these lacks interactive Web 2.0 capabilities. OpenCollection, an open-source project, includes a strong collections management system that also will eventually publish object records in an online catalog, but it does not build interpretive exhibits or public programs. Pachyderm from the New Media Consortium concentrates on creating modular presentations that work well for occasional needs of museums, but does not appear to address the greater digital needs of an entire institution. In addition, the exhibitions do not meet web accessibility standards because they produce closed, proprietary Flash movies. Project Builder from Michigan State University, which has been previewed at some conferences, also offers point-and-click web tools designed for non-programmers in libraries and museums, but it lacks social features such as the ability to collect from and share with online visitors.[9]

II. National Impact and Intended Results

History museums play a crucial role in preserving, interpreting, and transmitting the nation's cultural heritage.[10] Yet for all their physical and cultural assets, history museums face a difficult transition to the digital era, particularly because they must deal with both major funding and staffing challenges. How can they maintain their importance in an era when more and more Americans expect to find information and interact with cultural authorities online? How can they manage and share digital resources and strengthen their relationships with their communities without simultaneously finding new revenue sources? We believe that *Omeka* offers a solution to these problems—and one that will appeal especially to smaller history museums by providing a free, open source, and easy-to-use system that is standards-based, extensible and makes use of Web 2.0 technologies. We see three primary results that are linked directly to the needs we have outlined above.

1. Museums will be able to increase their online presence without adding to their budgets.

History museums, historical societies, historic houses, and cultural preservation institutions do not have the budget or the staffing to produce standards-based, interactive, online programming at a professional level. Although history museums are by far the largest category of museums (probably counting for half of the estimated 17,500 museums in the United States), they tend to be among the smallest and least well-funded institutions. In the recent IMLS study, almost two thirds of the "small" museums (budgets under $250,000) were history museums or historic sites; fewer than one-quarter fell in the "large" (over $1 million) category. Yet even museums able to devote full-time positions to a webmaster or programming staff cannot compete with the private sector, where technical salaries top that of curators and even some directors.[11] *Omeka* avoids this staffing problem because curators, educators, and volunteers can learn to use it within an afternoon or less. Rather than wasting time trying to learn programming languages, proprietary programs, and database schemas, they will be free to use their true expertise—knowledge of history, collections, and communities—to publish professional quality online content. In addition, museums will be able to take advantage of design templates built into the system as well as others contributed by the museum community, making use of dispersed design talent rather than hiring expensive design firms. As a result, many more museums will be able to mount well-designed, professional-looking, and content rich web sites. A recent "informal survey" of the 152 (mostly smaller) museums affiliated with the Smithsonian found "a strong interest in the *Omeka* project" and its goals of creating a "user-friendly, open-source method for making information about collections more accessible to the general public." *Omeka* will allow these small history museums to focus their constrained budgets on what they do well—historical preservation and interpretation and public education and outreach—not tasks such as database development, programming, and web design for which they have neither adequate expertise or budgets. (*See Appendix B for use case of a small historical museum.*)

2. Museums will be able to use materials for multiple contexts without redundant data entry and to share collections with other institutions, without being locked into particular vendors or platforms.

A standards-based, interoperable, open-source system will have four major benefits for museums. First, it will insure compliance with accessibility guidelines such as Section 508. Second, it will reduce the duplication of effort that has been typical of museum web projects. Some museums have adopted collection management systems, but they lack any easy way to move the materials from those systems to an online exhibit or an educational project. Most museums create each online exhibit as an entirely new project—often contracted to an outside vendor. As a result, those exhibits are effectively "siloed" and the content cannot be re-used later. An exhibit on 1950s suburbia might have considerable material for a later exhibit on Women in the 1950s, but the material would need to be moved manually from one set of flat web pages to another. *Omeka* will either operate as its own collection management system or it will import easily from the most popular existing systems, which will allow staffers to select and combine elements from across the full breath of their collections, resulting in greater presentational flexibility at lower cost. Third, museum-based efforts are not only siloed within institutions, they are also generally isolated from related efforts at other institutions. Five museums might be collecting and presenting the history of dolls, but using today's primitive software they cannot federate that content—or, even more interestingly, combine it ("mash it up" in current web lingo) with information available through other web services (e.g., Google maps and Flickr photos). Since it is database-driven, standards-based and interoperable, *Omeka* will allow museums to use the web to begin to break down physical walls and create unbounded virtual museums. (*See Appendix B for use case of a federated exhibit.*) Fourth, museums need to avoid proprietary solutions that make them vulnerable to sudden price increases from sole-source vendors or, worse, being "orphaned" with an abandoned product. As an open source solution, *Omeka* gives museums the assurance of knowing that prices will not increase and that community-based development will maintain a viable product for the foreseeable future.

3. Museums will be able to foster participation and interaction with their publics.

History museums need to build deeper connections with their publics, and *Omeka* will facilitate that by encouraging museum visitors to contribute to and engage actively with museum collections. For the past several years, the CHNM has been experimenting with ways to democratize the collecting and preserving of recent history by building "digital memory banks." Our ECHO project in the history of science, technology, and industry has done this in relation to a number of specialized topics such as the New York City blackouts of the 1960s and 1970s and the experiences of women in science and engineering. We have also undertaken broader based online collecting

efforts focused on the September 11 attacks and Hurricanes Katrina and Rita. The *September 11 Digital Archive* has collected more than 150,000 first-hand accounts, emails, images, and other digital materials related and in 2003 became the first major "digital acquisition" by the Library of Congress. The ongoing *Hurricane Digital Memory Bank* has already collected more than 23,000 digital items. The success of these projects has sparked interest among smaller historical museums that want to organize similar memory banks on topics of more local or specialized interest. But they lack the programming and database expertise to create such sites. *Omeka* leverages CHNM's extensive experience with online collecting, enabling such museums to create their own digital memory banks. Not only will *Omeka* include an optional audience contribution "plug-in," it will also offer additional interactive features such as an optional Google maps "plug-in" that will allow contributors to easily link their stories and pictures to specific locations. Thus, a local history society will be able to easily organize a project to document the history of a particular neighborhood or even block.

At the same time, other Web 2.0 approaches built into *Omeka* such as tagging, commenting, selecting, mixing, and syndicating content through RSS feeds will allow users to have significant interaction with museums' digital resources even if they are not contributing to a collecting site. Simply allowing users to subscribe to an RSS feed of newly uploaded digital objects or to comment on the elements of an online exhibit increases their investment in the institution. When users tag digital content, it assures that they can more easily locate the items that are of interest to them. Then, other users—and museum staff—can draw on the collective wisdom of those who have tagged the collection with keywords. Users also gain a sense that they are "adding to a shared stream of knowledge."[12] Finally, RSS feeds will let visitors integrate museum content with their own sites. Being able to pull a museum's digital resources into their own online environments will significantly increase users' sense of stewardship over those collections. Just as YouTube and MySpace have allowed individuals to create and share their own content, these optional *Omeka* features will make interested museums' digital resources available for creative and social recombination by users and enthusiasts. By giving museums the choice of these interactive and participatory features, *Omeka* will serve the larger needs of museums by engaging publics in thinking actively about the past, by building more regular interaction with a base of active museum visitors (who can support museums as volunteers and donors), and by encouraging democratic participation in collecting, preserving, and interpreting the past.

III. Project Design and Evaluation

Design

Omeka will provide an easy, flexible, and free way for museums to upload, store, describe, and exhibit their digital resources; to re-use existing resources and share those resources with other institutions; and to give their audiences the kinds of contribution mechanisms, tagging facilities, and social networking tools they are coming to expect.

Easy, Low-Cost Installation and Administration: Omeka and its source code will be freely downloadable and installable on any standard server that offers MySQL and PHP (the most popular database and programming language on the web), whether managed by the institution itself or by the many commercial hosting services offering this platform (where costs are as little as $8 per month). For any moderately experienced server administrator, *Omeka* will require no more than ten minutes to install. But for museums that don't have their own server or don't want to lease space on a commercial server, CHNM will also provide a hosted version of the software. Those using the hosted version will be able to sign up for a free account in a few minutes. During the planning and beta testing phases of the project we will determine the feasible extent of these free services and, if necessary, explore subscription, advertising, and charge back revenue models for larger hosted collections. But we are committed to maintaining a free hosting option for smaller collections as part of this project. CHNM already has extensive experience hosting free server-based services such as our *Web Scrapbook* and *Survey Builder*.

Standards-based Interoperability and Streamlined Exhibit Design: Equipped with translators for the most popular content and digital assets management systems (e.g., The Museum System, KE Emu, Mimsy, and Past Perfect), importing and exporting collections information will be as easy as uploading or downloading an Excel spreadsheet or XML file. Because many small museums also include book and manuscript collections, we also will develop imports for MARC and EAD records. In this way, *Omeka* can give museums a central repository of digital resources that can be mobilized and re-purposed in a variety of venues, ranging from thematic exhibits to educational projects to featured object blog postings. The Dublin Core metadata scheme that underlies *Omeka* will make this flexibility

possible and provides for each record to have a rich set of accompanying data that reflects the institutional knowledge and the collective expertise of the museum staff. By using Dublin Core, *Omeka* will remain both standards-based but also flexible enough to allow museum users to define their own metadata schema and taxonomies to suit their particular collections and expertise. Because *Omeka* will rigorously adhere to these metadata standards, fully exposes all database records, and exports to common XML standards such as the Open Archive Initiative (OAI), data can be readily uploaded into preservation systems such as DSpace. Varying levels of user permissions will securely associate the metadata with each object but will also allow individual users to tag and comment on objects.

Using the popular blogging package WordPress as a model, *Omeka* will employ a templating system, which will allow museum staff—even those without significant technical skill—to easily create professional, customized online exhibits from objects uploaded to the system. *Omeka* will be packaged with at least three standard templates. Switching among these templates will take just one-click, almost instantly changing the look and feel of an online exhibition without changing its content. Museums using *Omeka* may also design their own templates, and contribute these new designs under Creative Commons license to a "template directory" hosted by CHNM so other institutions can download, rework, and reuse them. They will be able to readily build these new templates with changes to only six files. Every *Omeka* template will include a *home page*, a collections *browse page*, an object *details page*, a *search results page*, an *about page*, and a *cascading style sheet* (CSS). By rearranging elements in these six files and selecting desired fields from the database, museum staff will be able to quickly alter the look and feel of a given exhibit or group of exhibits. Changing a few elements in the style sheet will immediately produce a new design for the site. By default *Omeka*'s template-based exhibits will render in Section 508 and WC3 compliant CSS and XHTML, allowing cross-platform and cross-browser compatibility. (*See Appendix C for screen shots of the types of different designs that a single Omeka installation will generate.*)

Finally, all *Omeka* exhibits will include built-in RSS syndication and OAI metadata to allow aggregation and federation of collections between *Omeka* installations at different institutions. CHNM will use this functionality to host a "live directory" on the main *Omeka* website of changes and updates to registered *Omeka* installations, much as Technorati and Bloglines provide live directories of recent changes in the blogosphere.

Community Interaction and Social Networking: Omeka will feature an open "plug-in architecture," allowing developers to extend its functionality and allowing museum staff to enhance and customize user experiences, fostering public participation and interaction. *Omeka* will initially be packaged with at least six optional plug-ins that will provide for: audience contributions; Google Maps-based object browsing; object time lines; Flickr integration; simple blogging; and user customization. CHNM will host a "plug-in directory" where developers can share plug-ins they have developed with the wider *Omeka* community. The audience contribution plug-in will allow users to add objects, including personal narratives and images, to the exhibition. To ensure quality control, the contribution plug-in will feature a "vetting" mechanism that allows museum staff to accept or reject individual user contributions. This back-end interface will also allow museum staff to define the collections and demographic information they collect from users. The Google Maps plug-in will use the Google Maps API to create a "mash-up" that geographically displays *Omeka* exhibition collections according to object coordinates supplied by museum staff or users themselves. Similarly, the time-line plug-in will use MIT's open source Simile Timeline API to present objects according to their dates along an embedded, dynamic, interactive time line. The Flickr plug-in will allow museum staff to query Flickr directly from the *Omeka* interface and automatically associate relevant Creative Commons-licensed photos and their metadata with collection objects. A blog plug-in will add a simple, multi-user blog to any *Omeka* installation. Finally, the "MyArchive" function will encourage site visitors to customize their experience by creating and storing their own sub-collections of objects from exhibitions and by "tagging" objects with keywords and marking them as favorites on their personalized "MyArchive" homepage. Museum staff will be able to turn these community features on and off depending on the degree of community interaction they want to promote. Finally, *Omeka* will feature several other Web 2.0 design features including a continually updated homepage to encourage repeat visitation, an RSS feed of the ten most recent additions to the site (or any given set of search results), and a click-able "tag cloud" of key object descriptors.

Production

Omeka is an ambitious project, but CHNM can complete it in three years because we will draw upon tools and

programming code that we have developed over the past five years of online work. CHNM has been working on these ideas in a number of different projects, including the *Hurricane Digital Memory Bank;* the *September 11 Digital Archive*; the *Object of History*; *Gulag: Many Days, Many Lives*; and *Katrina's Jewish Voices*. Our ability to draw on this base will greatly accelerate our work. (*See Appendix C for screenshots from these projects, and how they relate to Omeka.*) Moreover, in planning, developing, disseminating, and evaluating *Omeka*, CHNM will draw heavily on the expertise of our partner, the Minnesota Historical Society (MHS), which has just launched the Great Rivers Cultural Heritage Network (GRCHN)—a three-year project centered in Minnesota, North Dakota and South Dakota that is funded by a grant of nearly $1 million from the Bush Foundation of St. Paul with goals that directly parallel those of this proposal. For example, MHS seeks to "build a regional network that will integrate access to the collections of diverse institutions," "to enhance its capabilities through more robust, standards based, integrated systems," to "increase the quality and quantity of available digital content, in partnership with a variety of institutions," to "sustain the infrastructure through the use of solutions based on open standards." Given these common goals, MHS has decided to make *Omeka* a central feature of the Great Rivers Cultural Heritage Network, which means that they can provide considerable cost-sharing on the planning and testing of *Omeka* as well as an established network through which to disseminate the completed software. MHS, for example, will host its own version of *Omeka* and make it available to members of the Great Rivers Cultural Heritage Network as well as the Minnesota Digital Library (MDL), a consortium of museums, libraries, historical societies, and colleges that they also lead. (*See letter of Commitment from MHS in Appendix D.*)

Phase I (Six Months: October 2007-March 2008) — Planning and Consultation: During the first six months of the project, we will engage in a rigorous program of listening and learning in order to fully understand and better address the needs of small museums. We will convene two community meetings—one at CHNM in Fairfax, Virginia (to which we will invite members of the large Washington area museum community) and one at MHS in St. Paul—to demonstrate our current technology and thinking, to learn more about the specific web needs of network museums, and to gather ideas about how best to meet them. We will also release a video podcast of the meeting on the project website and ask for further comments. Finally, we will hold a smaller working weekend with key partners at MHS to synthesize the ideas we have gathered from our networks and to develop a detailed feature requirements checklist and development pathway for the next phase of the project. In fact, even before the official start of the project, we will solicit feedback on its designs from museums affiliated with the Smithsonian at the annual Smithsonian Institution (SI) Affiliations meeting in June 2007.

Phase II (Twelve Months: April 2008-March 2009) — Development of Beta and Partner Testing: In the next twelve months, we will develop a functioning version of the downloadable and hosted versions of *Omeka* for beta testing by our partners. We will develop our Dublin Core-based information architecture and database based on partner recommendations, implement the core "model-view-controller" software architecture in PHP (including the templating and plug-in systems), build the user interface for museum staff, develop the three basic templates, and write basic documentation. We will launch the beta in a meeting with MHS, who will, in turn, encourage their own partner institutions to try *Omeka* and to serve as beta testers. CHNM will then gather feedback from the testers through discussion forums, a project blog, and a documentation wiki. We will also encourage beta testers to provide written comments suggesting changes and new features. Moreover, in the spirit of open source, we will explore ways to collaborate and leverage other open source efforts focused more on collection management and cataloging to maximize interoperability and identify areas where code and methods can be shared, reused, and connected. Indeed, we are already in discussions with the developers of OpenCollection at the Museum of the Moving Image, where we see some promising avenues of collaboration and possibilities for interoperability between *Omeka's* web publishing features and OpenCollection's collection management capabilities.

Phase III (Six Months: April 2009-September 2009) — Revision and Release of Omeka 1.0: Over the next six months, CHNM will improve *Omeka* based on the experiences and comments of its partners and beta testers, implementing new features where required and possible, adjusting installation routines and user interfaces, and improving *Omeka*'s documentation and "help" materials. CHNM will also perform comprehensive "smoke testing" to identify and squash any bugs in the system. In addition to these fixes, CHNM will continue to tighten and refine the core software architecture to improve *Omeka*'s performance and speed. We will mark the launch of *Omeka* 1.0 with a live video conference with our partners in September 2009.

Phase IV (Twelve Months: October 2009-September 2010) — Dissemination and Evaluation: Omeka's initial dissemination

will be done through MHS, the Great Rivers network, and the MDL. In addition, supporters at SI Affiliations have agreed to work closely with us on dissemination among their nationwide network of more than 150 affiliate museums. Finally, the Historic Naval Ships Association—representing 170 historic ships and museums worldwide—as agreed to demonstrate *Omeka* at their annual conference. (*See letters of support in Appendix D.*) These and other evaluation and publicity efforts are described in more detail below.

Evaluation

Omeka will be evaluated throughout planning, development, and dissemination. During planning, our St. Paul and Fairfax meetings and video conferences will provide detailed information about the needs of a wide range of users. We will disseminate the proceedings of these meetings by podcast, through which we will also publicize an online survey of "most wanted features" to give us quantitative data to supplement the qualitative data already collected. As we move into active system development, we will "release early and often" to allow our museum partners frequent opportunities for product testing, evaluation, and direct feedback through the project's user forums, blogs, and wikis. As system components and new features come on line, iterative community testing, feedback, and system adjustments will make *Omeka* increasingly robust and user friendly. During this phase, MHS will also undertake more formal surveys and short interviews.

Finally, with the release of *Omeka* 1.0, we will begin summative evaluation of the product, keeping a close eye on numbers of downloads, website activity, individual accounts created, and postings on Omeka forums as rough quantitative measures of the success of the project. We will also continue gathering qualitative assessments, feature requests, and bug reports from users and potential users in conjunction with our extensive program of direct outreach and dissemination.

IV. Project Resources: Budget, Personnel, and Management

Budget

The total cost of the *Omeka* project is $377,734. Of this, $127,916 or 33.9 % is non-federal cost share, which includes contributions of staff time from CHNM and MHS. We are requesting the remaining amount of $249,817 we are requesting from IMLS. This contribution will pay for non-permanent project staff at CHNM and MHS, research assistants, technical and office supplies, travel, evaluation and dissemination costs, and mandated indirect costs. All IMLS funds will go to CHNM, which has a long track record of managing federal grant money and doing cost-efficient, high-quality online education and public history.

Personnel (See also List of Key Project Staff and CVs in Text Responses)

Co-executive Producer (Primary Investigator): Roy Rosenzweig has overall responsibility for program vision, partner relations, budget and grant management, and long-term sustainability.

Co-executive Producer (Primary Investigator): Tom Scheinfeldt has shared responsibility for program vision and particular oversight of internal staffing, technology development, quality assurance, program evaluation, and product dissemination.

Project Manager: Sharon Leon will coordinate day-to-day personnel management; programming and web development activities; partner meetings and involvement; museum outreach; product dissemination, evaluation and sustainability; and administrative responsibilities.

Senior Programmer: Nate Agrin will oversee system design and functionality, including database architecture, software engineering, and line programming at all system levels; testing routines and quality assurance; and system documentation and user support products. Agrin will also help build and manage *Omeka*'s open source development community.

Assistant Programmer: Kris Kelly will contribute software programming support to the senior programmer, particularly for *Omeka's* plug-in architecture and default plug-ins bundle. Kelly will also provide substantial web programming for the *Omeka* website and directories.

Web Developer: Jeremy Boggs will serve as *Omeka's* primary user interface designer, providing design, web development, and accessibility services for both the "backend" staff interface; the default set of "front-end" public templates; the *Omeka* public website; and the plug-ins, templates, and live directories.

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Project Associate: Sheila Brennan will help coordinate partner involvement including meetings and video conferences; contribute testing, quality assurance, evaluation, dissemination, and end-user support; and provide administrative assistance to the executive producers and project manager.

Outreach and Testing Coordinators: Robert Horton will coordinate activities at the MHS and its work with CHNM. Irene van Bavel will manage collaboration with the MHS's partnerships with the GRCHN and MDL. As part of the GRCHN project, the MHS is also hiring a project staff person to survey and evaluate the collections and technological capacities of its partners, and his or her responsibilities will include outreach and testing for *Omeka (See position description in Appendix E).*

Management Plan

CHNM's extensive experience in digital projects equips it to manage the planning, development, and dissemination of *Omeka*. The project builds directly on three core strengths of CHNM: 1) our development of widely used digital tools, including the open source *Zotero*—recently named among *PC Magazine's* "Best Free Software" less than four months after its beta release; 2) our creation of digital memory banks, such as the *September 11 Digital Archive*, the *Hurricane Digital Memory Bank*, and the *Mozilla Digital Memory Bank*, which have fostered an interactive model for documenting and preserving the past; 3) our use of the web for more than a dozen years as a vehicle for engaging broad and diverse audiences, often in partnership with museums, for example on our *Gulag: Many Days, Many Lives* project (a partnership with the National Park Service) or on the IMLS-funded *Object of History* project (a partnership with the National Museum of American History), both of which use some of the code and ideas that *Omeka* will embody.[13]

CHNM's success results from combining the knowledge and skills of credentialed historians with the experience of our multimedia and technical staff and considerable technical and equipment resources. *Omeka*'s executive producers, Roy Rosenzweig and Tom Scheinfeldt have overseen work on numerous grant projects with budgets totaling almost $10 million. (We will also benefit from the advice and help of Robert Horton, our outreach and testing coordinator, who is State Archivist and Director of the library, publications and collections division at MHS and has extensive experience managing grant funded projects.) Sharon Leon—who has considerable hands on experience managing large-scale, collaborative, museum and educational technology projects—will oversee the day-to-day work of the project by way of weekly production team meetings, periodic consultations with primary and secondary museum partners, and frequent communication via email, blog, instant message and conference call. Open communication among the managers, coordinators and staff will ensure that we integrate the comments of partners into production, and that we meet all of our project deadlines.

V. Dissemination

CHNM's reputation as a provider of open-source web tools, combined with MHS's stature among history and cultural heritage museums, will foster the dissemination of *Omeka* to a wide range of museums. CHNM will work with MHS as lead partner in planning, development, and dissemination, as well as with supporters at SI Affiliations and the Historic Naval Ships Association, to promote use of *Omeka.*

Naturally, our most aggressive dissemination efforts will be focused online. CHNM will host a free, downloadable version available on the *Omeka* website, much like CHNM's new bibliographic and citation tool, *Zotero,* which has already received 100,000 downloads since it was launched in October 2006. Our ECHO tools center hosts a comprehensive listing of digital tools of interest to those in history and humanities and offers another way to spread the word about *Omeka*. To drive traffic to the website and encourage downloads, we will mail announcements to museum listservs, H-Net lists, and make use of the *History News Network*, a CHNM affiliate that sends a newsletter to 13,000 people three times per week. Equally important, CHNM sponsors a number of widely read blogs, and these blogs have proven to be a very effective means for rapidly disseminating news to those interested in digital tools. We will also set up a separate blog specifically focused on this project, as we have done on *Zotero*. Lastly, we will follow a software dissemination strategy pioneered and proven by Mozilla's Spread Firefox group and others in the open-source community—"SWAG" or "Stuff We All Get"—to reward *Omeka* users who encourage new downloads with *Omeka* mousepads, thumb drives, t-shirts, and other promotional items.

In addition to these electronic outreach efforts, we will reach out directly to museum communities throughout the project. In particular, MHS will promote the project through its ongoing work with smaller museums in

Minnesota and the Upper Midwest, as well as to libraries and archives, since *Omeka* will work with such collections as well and many historical societies serve all three functions. MHS will, for example, make presentations about *Omeka* to the annual meetings of the Society of American Archivists and the Council of State Archivists. CHNM will make presentations and organize panels about *Omeka* at major conferences that attract museum professionals, including Museums and the Web, the American Association of Museums (AAM), the American Association for State and Local History (AASLH), the American Historical Association, and the Coalition for Networked Information. CHNM will also do some traditional print mailings using portions of lists purchased from AAM and AASLH. Finally, CHNM will publish more sustained commentaries on the results in publications directed at the digital museum community as we have already done with other CHNM projects. Finally, as outlined in their letters of support, colleagues at SI Affiliations and the Historic Naval Ships Association will work closely with CHNM to introduce *Omeka* to their combined memberships of more than 300 museums nationwide.

VI. Sustainability

CHNM's ability to sustain *Omeka* is demonstrated by more than a dozen years of work in the field of digital history. Since 1994, CHNM has used digital media and computer technology to present and preserve the past, and it currently hosts more than four dozen online history projects, among them several large, highly regarded and highly visited digital archives such as the *September 11 Digital Archive*, the *Hurricane Digital Memory Bank*, and the *Mozilla Digital Memory Bank*. With support from the National Historic Records and Publications Commission, CHNM is currently building an open-access archive for the *Papers of the War Department, 1784-1800*, a collection of more than 50,000 documents. CHNM has also become a major developer of digital tools in the humanities with support from IMLS and the Sloan and Mellon foundations. Most notably, CHNM has developed *Zotero*, an innovative, open-source reference management and note-taking tool. One testimony to CHNM's stability is that the creators of some major digital history projects—such as the award-winning *DoHistory*—have given their projects to CHNM in order to insure their permanence. (*See Organizational Profile in Text Responses for more details.*)

CHNM's stability stems from several sources. With the help of an NEH Challenge Grant, CHNM has raised a $2 million endowment, which provides for CHNM's long-term viability as a unit of the George Mason University Department of History and Art History. Mason also has a strong institutional commitment to CHNM, which has a $1.5 million annual budget and a staff of more than forty. The History Department has made "new media" a central focus of its new PhD program, which insures a steady stream of students (at least eight of whom work as Graduate Research Assistants at CHNM) interested in sustaining existing projects and creating new ones. CHNM has also recently received an Academic Excellence Equipment Award from Sun Microsystems. Housed in Mason's secure data facility, this state-of-the-art configuration will help meet CHNM's server technology needs for several years to come. This substantial endowment, demonstrated fund-raising success, strong institutional support, and solid technology allows CHNM to guarantee that the *Omeka* will be a permanent resource for researchers, students, and the general public.

The open architecture and standards of *Omeka*, its open source license, and its underlying open source technologies (MySQL, PHP) will enable future development, and we envision the software as an ongoing open source project after its release. CHNM has begun to spark just such a volunteer developer community around *Zotero*. To foster this open source community, we will produce a document outlining *Omeka*'s technical details and how developers of other collections, digital asset, and web content management tools can hook their applications into *Omeka*. In addition, we will host a discussion forum and wiki for users and developers to share their knowledge and explore new directions. Finally, CHNM is committed to maintaining hosted collections for the long term. CHNM has a long track record with other hosted tools such as *Survey Builder* and *Web Scrapbook* (each with thousands of users), but if the size and popularity of hosted *Omeka* collections outstrips our existing capacity, we will explore the feasibility of charge back and cost recovery models. We will also explore the possibility of providing paid long term preservation services to interested users

Schedule of Completion