extraMUROS

Project report 2010-2011
Harvard Library Lab
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Project Team

Core Team

Joseph Bergen	Lead Interaction Designer and Developer, Zeega.org
Luís Filipe Brandão	Lead Database Designer and Developer, Zeega.org
James Burns	Co-Founder + Relational Knowledge Fellow, metaLAB (at) Harvard Co-Founder and Chief Technology Officer, Zeega.org
Catherine D'Ignazio	Designer and Developer, Zeega.org
Kara Oehler	2011-2012 Radcliffe-Film Study Center Fellow Co-Founder + Documentary Arts Fellow, metaLAB (at) Harvard Co-Founder + Editor-in-Chief, Zeega.org
Robert Gerard Pietrusko	Co-Founder + Embodied Informatics Fellow, metaLAB (at) Harvard MArch I Candidate, GSD
Alix Reiskind	Visual Resources Librarian, Frances Loeb Library, GSD
Jeffrey T. Schnapp	Professor of Romance Languages and Literatures, FAS Faculty Director, metaLAB (at) Harvard Fellow, Berkman Center for Internet and Society
Jesse Shapins	Co-Founder + Associate Director, metaLAB (at) Harvard Co-Founder + Chief Strategy Architect, Zeega.org Instructor of Architecture, Faculty of Architecture, GSD PhD Candidate in Urbanism and Critical Media Practice, FAS
Ann Whiteside	Librarian/Assistant Dean for Information Resources Frances Loeb Library, GSD

Senior Faculty Advisors

Peter Bol	Harvard College Professor and the Charles H. Carswell Professor of East Asian Languages and Civilizations Director of Center for Geographic Analysis at Harvard
Lucien Castaing-Taylor	Professor, Departments of Visual and Environmental Studies and Anthropology, FAS Director, Film Study Center Director, Sensory Ethnography Lab Co-Director of Graduate Studies, Secondary Field in Critical Media Practice
Andrew Gordon	Lee and Juliet Folger Fund Professor of History, FAS Director of Reischauer Institute for Japanese Studies
K. Michael Hays	Eliot Noyes Professor of Architectural Theory, GSD Associate Dean of Academic Affairs, GSD

Additional Faculty, Staff + Student Participants

Amy Benson   Librarian/Archivist for Digital Initiatives, Schlesinger Library

Sheila Connor   Horticultural Research Archivist, Arnold Arboretum

Michael Hooper   Assistant Professor of Urban Planning, GSD

Erika Naginski   Associate Professor of Architectural History, GSD

Stephen Chapman   Project Manager, Digital Lab, Harvard Law School

Jolene de Verges   Digital Projects & Metadata Manager/Architecture and Visual Arts
                           Librarian, MIT

Ned Friedman   Director of the Arnold Arboretum, Arnold Arboretum

Jeanne Haffner   Lecturer in Urban Studies, Brown University

Maggie Hale   Librarian for Collections Digitization, Harvard Library

Dianne Harris   Professor, Department of Landscape Architecture, Architecture, Art
                           History, and History
                           Director, Illinois Program for Research in the Humanities

Mariana Ibanez   Assistant Professor of Architecture, GSD

Ernst Karel   Lecturer in Anthropology, FAS
                           Assistant Director, Film Study Center
                           Manager, Sensory Ethnography Lab

Simon Kim   Assistant Professor, PennDesign, University of Pennsylvania

Kevin Lau   Head of Library Information Systems and Instructional Technology, GSD

Nancy Levinson   Editor, *Places* journal
                           Co-Founding Editor, Harvard Design Magazine

Ben Lewis   Senior GIS Specialist, Center for Geographic Analysis at Harvard

Kyle Parry   PhD Candidate in Film and Visual Studies, FAS

Joana Pimenta   PhD Candidate in Film and Visual Studies, FAS

Mark Pompelia   Visual Resources Librarian, RISD

Jeffrey Quilter   Deputy Director, Peabody Museum
                           Senior Lecturer, Archaeology Program

Project Overview

Note: extraMUROS was initially conceived as a project to expand a working prototype of Zeega, an open-source HTML5 platform that aims to provide integrated tools for collection-building, multimedia editing, experience design and cross-platform publishing. Over the course of the project development, the descriptions of extraMUROS and Zeega came to appear synonymous. In the interest of clarity, we have recently decided to focus communications and only refer to the project under the name Zeega (or internally, as Zeega Collections). This report begins this process of clarification, and hence below the copy refers to Zeega in most cases.

The mission of Zeega is to provide a new model for digital collections development, curation and dissemination. Our approach is based on a few core principles:

- an expansion of the traditional intramural concept of the library to an understanding of the library as an expanded, multinodal network of repositories, APIs and interfaces
- a commitment to supporting innovative cross-media platforms built around the triangulation of research, teaching and scholarly communication
- an intensified commitment to public access and public knowledge creation

The chief attributes of the Zeega toolkit include:

- SHARED ACCESS = Zeega provides a model for the creation of "digital archives without walls" built on connections between intramural and extramural repositories and couplings between different media types, connecting digital collections from libraries, museums and archives across the country with one another, as well as with repositories like the Internet Archive, Flickr, YouTube, and others

- VISUAL DISCOVERY = Zeega allows users to explore collections in a completely new way by offering new modes of visualization and geographic access

- CURATION = Zeega allows scholars, students and the public to collaboratively curate and share archival subdomains, as well as online exhibitions, slideshows, and editions combining text, digital images, audio and video

- MULTICHANNELING = Zeega creates a flexible pipeline that facilitates the experience of curated assets and multimedia scholarship not only online, but also in by means of tablet devices (e.g. iPad)

Since initiating project development in February, 2011 we successfully achieved many of the above goals for our early October deadline. In particular, main milestones reflected in our product prototype include:

- **TRANS-DISCIPLINARY + TRANS-INSTITUTIONAL TEAM**
A unique feature of the Zeega project is the expansive, collaborative team we have built over the past six months. This team includes senior faculty, junior faculty, library leadership and staff, graduate students, fellows and independent designers and developers. The core group is within Harvard, but we have also taken the charge of extending the value of the Library Lab's work by integrating external partners.

  This team has been integral to developing the initial prototype of Zeega and they are deeply committed to fostering its futures design and growth through adopting the tools in their research, teaching and publishing. We see bringing together this unique mixture of backgrounds and skills as one of our major successes and a model for future library innovation.

- **DATABASE ARCHITECTURE**
A major technical challenge within the Zeega concept is the ability to at once perform rapid queries of a database containing millions of objects *and* to constantly write new edits to the database, storing these query paths and user interactions as new collections objects. In this initial phase of the project, we have successfully architected a database strategy that succeeds in achieving these dual roles through a combined MySQL + Solr database architecture.

- **USER INTERFACE DESIGN AND DEVELOPMENT**
A core contribution of Zeega to the library community is a new series of well-designed, immersive user interfaces. In contrast to many library tools, these interfaces foreground the exploration of library content through playful, media-driven user experiences, intentionally limiting the initial amount of metadata presented, aiming to captivate users with the content itself.

  We've pursued three viewing modes for exploring the Zeega catalogue: Collections, Map and Time. The Collections view is based on a visual-driven matrix of icons; the Map view is a novel grid-based approach to geographic containers and has successfully been implemented in 2D and 3D versions; the Time view allows for exploration via a temporal dimension. Incorporated with each of these views is a user workspace that allows fine-grained curation of personal collections.

- **USER-CENTERED PROJECT DEVELOPMENT**
True to our user-centered design and development approach, we have been building Zeega in tandem with concrete research projects. We will be releasing a series of articles with *Places* journal this fall on the topic of "Curating the American Landscape." In addition, we are extending the Zeega platform through the creation of custom features to support the Digital Archive of Japan's 2011 Disasters in collaboration with the Reischauer Institute for Japenese Studies and the Center for Geographic Analysis. Moreover, this fall we are beginning a curatorial innovation program in collaboration with GSAS and the GSD which will offer Harvard graduate students the opportunity to become deeply engaged in collections-based research, curation, and digital design. The project editor is also being used this fall in classes at Harvard, including a Gen Ed course "Re-Inventing Boston" and "Music 220: Chinese Music in 18th Century Europe."

- **TABLET BROWSING**
We have successfully made it possible to browse Zeega collections through a browser-based web application on tablet devices. This tablet browser includes inline audio and video playback, both of which were significant technical hurdles and illustrate the promise of HTML5.

- **COLLECTIONS INTEGRATION**
We have successfully incorporated collections from the Harvard Library (select repositories from VIA); Macaulay Library of Sounds at Cornell; Library of Congress; Flickr; YouTube; and Archive.org.

- **EXPANDED COMMUNITY**

We have successfully expanded the compass of Zeega's impact beyond scholarly libraries. We entered Zeega into the Beta Sprint of the Digital Public Library of America, for which it was selected as one of six showcase projects. The project is also gaining tremendous support in the journalism and documentary communities, as it was awarded a grant from the Knight Foundation's News Challenge. It has been remarkable to see the convergence of interests between the journalism and library communities, and their shared interest in providing quality access to information and media, and providing scholars and citizens tools for using this media in new ways.

Project Challenges and Next Steps

Despite these achievements, there remain a series of core features necessary to realize Zeega's overall vision and deliver its value to the library community. We are planning to pursue the development of the following additional features/initiatives over the coming year. These include:

- **SUSTAINABILITY**
As the goal of the initial phase of the project was to experiment in developing a prototype, we have to date not explored the practicalities of integrating Zeega with existing library systems. Over the coming year, we would devote resources towards planning and technically implementing an integration with the Harvard Library and other systems. This might take the form of Zeega (or extraMUROS) becoming a tab within HOLLIS or another approach. In addition, we have already begun substantial collaboration with the Library Lab project LibraryCloud and the related initiative ShelfLife. In this context, we would integrate Zeega as the engine for browsing and creating collections within ShelfLife, as well as connecting the project's multimedia editing capabilities to facilitate the creation of annotated books and other works. Moreover, content from the Zeega catalogue would appear in ShelfLife queries.

In addition, this would include exploring grant opportunities for long-term funding from sources inside and outside Harvard and the library community, itemizing long-term staffing and infrastructure needs, and establishing organizational/governance models.

- **ADVANCED Zeega API**
Our October prototype includes a basic API. However, we would strongly desire to further develop this, thus making the Zeega catalogue, interfaces and editing capabilities more easily accessible within other applications.

- **TEXT + DOCUMENT OBJECTS**
Zeega was initially conceived as supporting a "multimedia library without walls," and thus privileged audiovisual materials. However, from the very outset of the project, we were acutely aware of the need to incorporate textual materials. We demonstrated this vision in our March video, but given that this lay beyond the initial project's scope, this feature will not be ready by October. Over the coming year, we intend to make the integration of textual corpora, whether in the form of digital documents or images of textual materials that can be annotated, a central priority. This commitment includes the development of custom text-centric viewing interfaces (e.g. list and tag-cloud), as well as the integration of Google Books API and the ability to view PDFs (likely through integration with the open-source project DocumentCloud).

- **MEDIA UPLOADING + STORAGE**
A significant barrier to the growth and use of Zeega within the Harvard community (and elsewhere) is limited media uploading and hosting capabilities for short-term collections development. Currently, digital collections at Harvard must pass through the major barriers of the DRS. We propose the creation of a lightweight, intermediary solution that allows Harvard faculty, researchers, students, and staff to upload media that can be included in Zeega. We have already received multiple requests for this service, ranging from faculty in Archaeology to the Graduate School of Design.

Parallel to Zeega, we have begun experimenting with an approach to this problem through building a custom WordPress theme that allows very simple uploading of media of all types and rich metadata annotation. We chose WordPress because it already has a very easy-to-use media uploading interface with which many users are familiar. We propose expanding this tool to automatically populate Zeega with uploaded media. In addition, we would like to expand our media storage capacity. We would advance these goals through a series of test cases over the next year.

- **ADVANCED CURATORIAL TOOLS**

Over the past year's development, we kept the code for the extraMUROS project and the core Zeega platform fairly separate. This has lead to a mistaken sense that they are two separate projects. A top priority right now is developing a rich integration, and part of this is the renaming effort so that we and others conceptually perceive them as an integrated project. From the beginning, we have envisioned a rich integration of the library/collections features and Zeega's multimedia editing features. Adopting Lev Manovich's famous spectrum of database and narrative, we've understood ourselves to navigating both the database and the narrative, and see this combination as our unique strength. We are currently developing the ability to bring collections as objects into the Zeega editor, and vice-versa, to bring Zeega narratives into the collections-browsing interface. Moreover, we would like to enable the incorporation of collections and attendant interfaces into Zeega narratives as nodes, as well as allow Zeega users to browse their database of items through the collections visualization tools. However, this full integration, which we hoped to achieve by October, is incomplete. We plan to achieve this full-scale integration over the coming year, thus enabling all Zeega users to profitably benefit from integrated tools for collection-building, multimedia editing, experience design and cross-platform publishing

- **ADVANCED SHARING + PUBLICATION OPTIONS (EMBED FEATURE)**

We have envisioned a key feature that allows users to easily embed collections they generate within Zeega on any website through a simple JavaScript-based iframe widget.

- **ADVANCED TABLET INTERFACE DEVELOPMENT**

While we have made it possible to browse Zeega collections on tablet devices, this interface is modest compared to the desktop version and the potential offered by the current generation of tablets. Over the next year, we propose evolving this tablet interface to more closely resemble the user experience of the desktop version.

- **ADVANCED COLLECTIONS INTEGRATION**

While we have demonstrated the potential for integrating multiple collections from inside and outside Harvard, there remain many collections that would deeply enhance Zeega. Part of this further iteration of collections development would be a streamlined interface and API for adding entire collections.

Budget Spent

The full project budget has been spent. The funds were managed through Zeega's non-profit, Media And Place (MAP) Productions. Below are the expenditures on staff and consultants.

James Burns - Lead software development	$35,500
Kara Oehler - Collections Development and Project Prototyping	$18,000
Stewart Smith – Graphic Design	$13,000
Joseph Bergen – Interface Development	$10,000
Jesse Shapins – Project Management	$9,000
Robert Gerard Pietrusko – Interface Design	$5,000
Todd Elfman – Project Administration	$4,000
Catherine D'Ignazio – Interface Development	$3,000
Travel	$1,000
TOTAL:	$97,500