



Brandeis University

Library & Technology Services

Digital Initiatives

A Business Requirements Document (BRD) for:

Digital Asset Management

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Summary

The university has both immediate and long-term needs for digital storage. In the short term, there is an urgent need to accommodate the images used for asynchronous course support that had previously been stored in WebCT CE. In the long term, digital assets are increasingly vital for teaching and learning, scholarship, communication, and preservation at Brandeis.

In response to this problem LTS is exploring the university's needs for digital asset management.

Problem Statement

Brandeis faculty, staff, and students manage digital assets using a variety of tools (currently Digitool, Artstor, VFinity, Video Furnace, Sympa, and WebCT) and make them available to the community for a variety of purposes. This spectrum of tools developed organically, and multiple digital repositories with overlapping purposes now exist.

As a result:

1. We have a number of digital assets stored in tools, such as WebCT, that are not well-suited to file storage.
2. Duplicates exist of many digital assets across the repositories.
3. We do not currently have a repository structure which permits expansion for new purposes (e.g. institutional repository, archival preservation).

Goals and Objectives

Goal

Implement a sustainable model for digital asset management at Brandeis that permits storage, creation, and discovery of digital assets.

Objectives

- Assess the university's needs for digital assets
- Create a plan for the use of digital assets at Brandeis
- Enable management of the varied types of digital assets
- Enable members of the Brandeis community to publish, catalog, store, and preserve digital assets
- Enable sharing, searching, discovering, and viewing of digital assets and their associated metadata

Current State

Brandeis provides access to a number of different collections of digital assets. These collections are stored on an array of existing systems. As a result, there is no consistent user interface for students and researchers who wish to use these collections.

- Images for use in the classroom (synchronous course support), stored in Digitool
- Images for course support through course management software (asynchronous course support), previously stored in WebCT Campus Edition
- Asynchronous course support documents, currently stored in WebCT
- Daumier lithograph collection, stored in Digitool
- Image collections stored on the public web server
- Audio collections, stored on the public web server
- Streaming audio and video, made available through WebCT, faculty web pages, and the public web site
- Brandeis dissertations are remotely hosted and accessed via a web interface.
- University Archives & Special Collections stores its finding aids in a database on a library desktop system.
- The university's collections include uncatalogued student and faculty work as well as digital assets used by various staff departments.
- Scanned archival photos on an LTS shared drive.
- CDs and DVDs of both university and proprietary archival materials.

High Level Requirements

Purposes

The digital asset management tools must support a number of different purposes within the university:

- Asynchronous course support: Documents made available for student use outside of class, as a back-end storage mechanism for a course management product.
- Synchronous course support: in-class teaching tools.
- Storage and discovery of e-portfolios created by students and faculty.
- Presentation of assets for the public Web presence.
- Storage and preservation of archival and special collections assets.
- Discovery and presentation of archival and special collections assets.
- Storage, discovery, and preservation of scholarly materials for purposes such as Open Access and scholarly collaboration.
- Access to remote assets not housed on-site or owned by the university.
- Storage and discovery of community assets, such as student communication tools.

- Back-end support for document management and records management solutions.

System requirements

- Tools for exporting all assets and descriptive information to common formats for use in an alternate digital asset management solution.
- Integration with existing university systems.
- Extensibility and customizability.

Assumptions and dependencies

General assumptions

- The university has growing and changing needs for digital asset management, and any solution must be flexible enough to accommodate future changes in requirements.
- The digital asset manager will use industry standards for metadata, file type, etc., in order to create sustainable models.
- Implementation will be conducted in a phased approach. If any component of the solution is ready for implementation at an early date, that implementation does not need to wait for the entire phase or project.
- Digital Initiatives will manage this project, in collaboration with other LTS groups and campus constituencies.

Dependencies

- System must integrate with existing presentation methods for digital collections, including the public web site and the course management system. This integration will likely require customized development.
- The digital asset manager will use systems of record for authentication and authorization.

Other Considerations

Targeted delivery schedule

Short-term: Use existing tools to provide solutions for short-term institutional needs during summer and fall 2006.

Medium-term: Review available digital asset management solutions using university requirements by September 30, 2006. Select appropriate tools. Integrate digital asset management solution into Brandeis environment.

Long-term: Plan, implement, and promote appropriate applications of the digital asset management solution, including an institutional repository, e-portfolios, preservation and presentation of archival collections, etc.

Appendices

Appendix A: Current State, Processes, Workflow

Images

1. Images for use in the classroom (synchronous course support):

- a. Images to be used in classrooms come from two sources: the Artstor online databases, faculty collections, and scans created by the fine arts librarian.
 - i. When the fine arts librarian scans an image, she saves a high-resolution tiff on Omega with an accession number.
 - ii. She then saves a lower resolution JPEG with the same accession number in Digitool.
 - iii. She then creates appropriate metadata for that image.
 - iv. When she has done so, she contacts the information technologies coordinator, who moves the new images and metadata from the fine arts librarian's private collection on Digitool to the public collection which is available to all aleph users with valid ID and PIN numbers.
 - v. Faculty can modify metadata directly on the public collection.
 - vi. If the fine arts librarian needs to modify an image, she contacts the information technologies coordinator, who removes the old image, and replaces it with a new file provided by the fine arts librarian into private collection.
- b. In order to display these images in the classroom, faculty use one of two methods:
 - i. A locally hosted shareware product, in which faculty copy the images to their desktops and create a slide show, or
 - ii. A product provided by Artstor (the Offline Image Viewer – OIV) which allows presentation of both Digitool and remote Artstor images

2. Images for course support through course management software (asynchronous course support):

- a. Low resolution tiff files are created by the fine arts librarian and uploaded by faculty to WebCT Campus Edition with minimal metadata. They are stored in the WebCT media library, which is distinct from the WebCT file store.
- b. The upgrade from WebCT CE to WebCT Vista did not offer a migration process for images stored in the media library. During the conversion to WebCT Vista, images are being transferred by Mike Pino by hand. This process is not complete and will happen for one class only

Asynchronous course support materials which are not images

All other asynchronous course support materials are maintained in WebCT. Faculty use course management software to place all electronic reserves and asynchronous course support materials directly in WebCT. The files are stored in the WebCT file store.

Streaming audio and video

Presentation Methods

Streaming audio and video is made available through four front-end tools, usually selected by the purpose for the multimedia asset.

- **IPTV** is delivered via the LTS website.
- **WebCT**: Materials for asynchronous course support are made available on WebCT, either by the placement of reference files pointing to the streaming server or to VideoFurnace, or by direct storage in the WebCT file store.
- **Faculty web pages**: Materials for asynchronous course support might also be placed directly on course web sites by faculty members.
- **Public website**: Materials made available to the public on the university website by the placement of reference files which point to the streaming server.

Delivery Mechanisms

Streaming audio and video is delivered in three ways:

- VideoFurnace
- Streaming server (streaming.unet.brandeis.edu)
- Individual files placed directly in WebCT or on HTML pages by faculty

Workflow for Preparing, Storing, and Delivering

Streaming audio for asynchronous course support is handled through the Instructional Technology Resource Center on a case by case basis. Faculty members currently have no access to the source files on the streaming server. Streaming audio and video assets for departmental websites and the main Brandeis website are prepared and posted by Web Technology Services. Most video assets are either recordings of campus events or promotional videos created by the Office of Communications, while audio assets are usually recordings of lectures on campus. Under current procedures, streaming asset files are never removed from the streaming server.

To prepare assets for streaming, ITRC or WTS:

- converts the asset file to a streaming-ready Quicktime format (currently we use hinted .mov files)
- posts the asset on the Brandeis streaming server
- creates a reference file that links to the streaming asset
- posts the reference file on WebCT, the requestor's departmental website, or the Brandeis website
- creates a page (if needed) that automatically plays the streaming asset

Collections

Streaming audio and video includes the lecture audio collection:

- Eleanor Roosevelt lectures
- Abraham Maslow & Harry Rand Lecture
- Martin Luther King, Jr. lecture (pending)

Additionally, high-quality curricular streaming videos are made available for a selected number of courses. In Fall 2006, this program will expand to provide streaming access to curricular videos for a larger group of courses.

Daumier lithograph collection

The library owns an almost-complete collection of Honoré Daumier lithographs donated by the Trustman family. This collection of political cartoons in the public domain has been made available as a pilot digitization project and to facilitate scholarly use of the images. The digitization was made possible by a 2001 Institute of Museum and Library Services grant. The Daumier collection was created and stored in Digitool and is presented via a link in the Brandeis public web site which connects directly to the Digitool search interface. It is open to the public and is not currently being modified.

Shakespeare's First Folio Online

The library's scanned Shakespeare first folio is hosted at the Perseus Project.

Other Archives & Special Collections image collections

Note that the following collections are not housed in a digital asset management system but are simply part of the Library Research pages of the LTS website, or stored on the LTS shared drive.

Images that live and are maintained on the public web site via straight HTML include:

- Book of Hours Image Collection
- African-American Portraits by Carl Van Vechten
- Spanish Civil War Posters
- Helmut Hirsch Exhibit
- "The People's Attorney": The Life of Louis D. Brandeis, 1856-1941
- Leonard Baskin & The Gehenna Press, 1951-1971
- Building Brandeis: Style and Function of a University
- Brandeis University: Fiftieth Anniversary Timeline
- Brandeis University Libraries: Fiftieth Anniversary Timeline
- Brandeis University National Women's Committee
- Early Campus Photographs
- Images of Brandeis: 1948-1998
- Images of Robert D. Farber's Artwork
- Remembering Ford & Sydeman Halls

Scanned archival photos live on in LTS shared drive.

Archives and Special Collections finding aids

The archives and the special collections maintain their finding aids in an Inmagic database located on a library desktop system. They are transformed into HTML and EAD formats, which are stored in the LTS shared drive and on the web server. These finding aids, which allow discovery of the archives and special collections physical assets, are themselves digital assets.

Dissertations

Dissertations are remotely hosted and accessed via a ProQuest interface.

Uncatalogued Brandeis community work

- Many student, staff, and faculty projects are currently stored on the Brandeis websites. The extent of all digital collections on campus is unknown to LTS, but the university's collections include uncatalogued student, staff and faculty work as well as projects in departmental storage.

Appendix B: Glossary

Asynchronous course support: In asynchronous training, interaction between instructors and students usually takes place through links to content, email and discussion.

Digital Asset: Any digital media file that has long-term value for Brandeis University.

Digital Asset Management (DAM): A combination of technologies and procedures that allow the efficient storage, retrieval, and reuse of the digital files that are important to Brandeis.

Discovery: the search for and location of information resources on computer-based networks, in response to human or automated queries.

E-portfolio: a web-based information management system for student output. A student's digital repository of artifacts used to demonstrate competence and reflect on learning. With access to records, digital repository, feedback, and reflection, students can achieve a greater understanding of their individual growth, career planning, and CV building.

Institutional Repositories (IR) are online loci for collecting and preserving -- in digital form -- the intellectual output of an institution. This might include research journal articles (preprints and postprints, as well as open access articles), digital versions of theses and

dissertations, but it might also include other digital assets generated by normal academic life, such as administrative documents, course notes, or learning objects. IR's are intended to facilitate scholarly communication with open access, and to store and preserve other digital assets, particularly unpublished or otherwise easily lost items.

Learning Objects: In a curricular context, Learning Objects are small, re-usable modules (animations, rich media, annotated texts, interactive data sets, maps, simulations) that are used by faculty to enrich their courses and their teaching.

Learning Object Repository (LOR): An online location for collecting and preserving the learning objects of an institution in digital form for repeated use.

Private collection: (Digitool term) In our current usage, a collection used for workflow purposes, into which images can be placed with associating metadata before being approved and moved for public viewing into the public collection.

Public collection: (Digitool term) In our current usage, a collection of images and metadata viewable to the world, with or without authentication requirements.

Repository: the location where an institution's digital assets are stored. While it is possible for a repository to consist of metadata which points to remotely stored non-metadata assets, a complete digital object should be considered to be the asset itself and its accompanying metadata. A repository might consist of multiple backend locations, such as a tool which stores metadata in a database and the accompanying filesystem where the digital assets themselves are stored.

Resource discovery: The process through which one searches and retrieves an information resource.

Synchronous course support: In synchronous training, instructors and students can interact through live chats, whiteboards and oral discussions. Additionally, synchronous course management software can allow technological tools used in the physical classroom.

Workflow: The process by which various steps in any work environment are assigned to individuals or groups with varying levels of authority, and then approved as necessary and moved to the next step.

Appendix C: Products

Products mentioned in this document include:

Artstor	a Mellon foundation funded database of images available for teaching purposes
Digitool	Ex Libris' digital asset management product
InMagic	database used to provide access to information about archival collections
MyCourses	a Brandeis-produced product to ease interaction with course management software
QuickTime	Apple's audiovisual format
VFinity	a video-focus digital asset management product
Video Furnace	a product which enables delivery of streamed audiovisual content
WebCT CE	our previous course management system
WebCT Vista	the course management system to which we are currently upgrading

Appendix D: Conceptual Model for Digital Asset Management

