



Brandeis University

# **Library & Technology Services**

## *Web Technology Services*

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**A Business Requirements Document (BRD) for:**

# ***Content Management System (CMS)*** ***@ Brandeis***

*<Version 4.0>*

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***Date: October 19, 2005***

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## Summary

Due to its heavy reliance on desktop tools such as Adobe GoLive, the current model for web publishing at Brandeis creates substantial challenges for university publishers and for LTS staff supporting web publishing. Publishers often struggle to edit existing pages, add new pages, manage the structure of their sites, and integrate dynamic content. At the same time, LTS staff are hard-pressed to provide a level of support that fully meets the needs of the Brandeis campus community.

In response to this ongoing problem, a combined group from the Office of Communications and Information Technology Services (ITS) began to explore Content Management System (CMS) solutions in 2003. The group researched and evaluated several potential systems; resources, however, were insufficient at the time to select and implement a CMS.

The newly formed Web Technology Services (WTS) unit of Library and Technology Services (LTS) was charged with seeking a solution to the web publishing problem, so in 2005 progress toward a CMS exploration began in earnest once again. User focus groups were conducted, and WTS staff performed an extensive evaluation of current business practices and support modes.

This document has been informed by the project's *User Needs Analysis* and *Vision and Scope* documents. Please consult these documents for additional information.

### **General Information**

During the process of selecting and implementing a CMS, staff from Web Technology Services will work closely with campus web publishers and colleagues from within Library and Technology Services. Work on this project will be performed by various teams, each with a separate focus. *For more information about the membership of each team, please consult Appendix 2.*

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**Core Team:**

In partnership with the technical and functional teams, the Web Technology Services group within LTS will evaluate, select, install, configure, implement, and maintain a Content Management System for Brandeis University. WTS will also provide training related to this effort.

**Technical Evaluation Team:**

This team will review the technical features and requirements for a CMS. All WTS staff will participate as their schedules permit. Additional membership will be sought from other LTS groups.

**Functional Evaluation Team:**

This team will examine the features of the various systems, evaluating them in the context of Brandeis’ needs. WTS staff will be joined by an invited group of LTS staff and community stakeholders. *See external document Functional Evaluation Team Expectations for guidelines on commitment.*

**Communications Team:**

This group will manage the messaging surrounding the CMS process – including invitations to participate in evaluation, sharing project documentation, and providing progress updates to the community.

**Implementation Team:**

This team will implement the CMS. Team members will be drawn from the WTS Core team, community stakeholders, and several LTS groups. Team members from Networks and Systems (NetSys) will provide assistance and support during installation and configuration. NetSys staff will also provide ongoing consultation and support during and after implementation of the CMS.

**Support Team:**

During the pilot implementation phase, WTS will provide support for users of the CMS during business hours. First-tier support may be transitioned to Tech Desk employees once the full implementation phase has begun. Issues surrounding ongoing CMS support will be addressed as the project progresses.

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## Problem Statement

Web publishing at Brandeis takes place primarily with desktop tools (such as Adobe GoLive) and utilizes direct FTP to a live published environment. Campus web publishers must learn complex techniques to make even simple changes to the text on their sites. When required to manage the structure of their sites or integrate dynamic content, publishers are often unable to navigate the complexity of their web publishing tool to accomplish the outcomes they require. These technical challenges make publishing to the web a challenging and laborious process. As a result:

1. Most staff members charged with web site maintenance can't update their sites frequently, resulting in a "publish it and forget it" model.
2. Sites within the Brandeis web presence often fall out of date and lose their consistency of design.
3. Web publishers often forget the complex techniques needed to publish on the web and must struggle to relearn them under deadline pressure. In these situations, publishers frequently erase current information or web page design elements. Staff turnover exacerbates this aspect of the problem.
4. LTS staff members are hard-pressed to provide a level of support and training that fully meets the needs of the Brandeis web publishing community.

The extensive use of the Brandeis web presence by internal and external site visitors only amplifies this problem. For the main Brandeis web server, as of September 2005:

- There were 24,360 static web pages (HTML) hosted on the Brandeis main web server.
- An average of over 600,000 pages were requested per day, with the home page representing about 9% of these requests.
- The majority (62%) of requests came from off campus.

For myBrandeis, the student web portal, as of Fall 2005:

- An average of 60,000 pages were requested per day, with 1 GB of data transferred each day.
- News functionality drives content for the Brandeis home page.

## Goals and Objectives

### **Objective**

Because the current publishing model is unsustainable, a new model for web publishing will be adopted at Brandeis. Easy editing of web page content through a web browser window will empower more content stewards with the ability to keep pages up to date. Content reuse and syndication will enable community members to advertise and promote their offerings efficiently. The paradigm for web site workflow at Brandeis will become "publish it, manage it, and disseminate it".

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## Goals

### *Simplify web publishing process*

- Implement a web publishing process that is easy even for inexperienced publishers.
- Simplify the process for editing pages and publishing minor changes to content.

### *Provide robust tools to advanced web publishers*

- Empower advanced publishers to develop with industry standard coding and development techniques (prior knowledge remains valuable and viable asset).
- Introduce optional approval / review process for published content. Stewards will be able to review content before it 'goes live' to the web. Process can include designated roles for review / proofing.
- Incorporate accessibility into web publishing workflow.
- Permit publishers to easily create dynamic pages and to integrate dynamic data from Brandeis systems of record.

### *Implement web publishing best practices*

- Separate design from content so that changes to one will not disrupt work on the other.
- Optimize page load time through proper image inclusion techniques (downsampling and resizing).

## Current State, Processes, Workflow

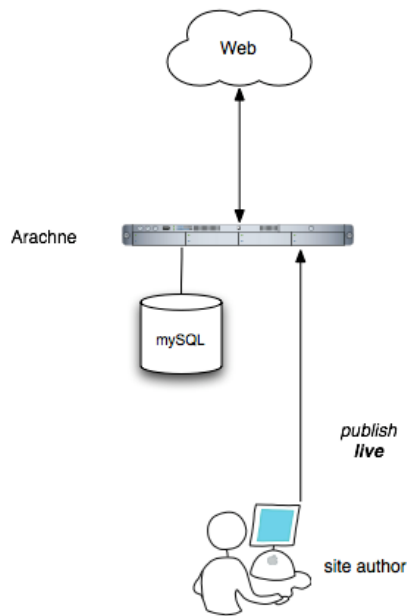
*Describe the existing environment including current systems, tools and workflow. Include flowchart of diagrams to help describe current state.*

The Brandeis web development process currently involves direct FTP access to live published content. Changes are made locally using a desktop authoring program (LTS supports Adobe GoLive for this purpose). Content stewards then connect directly to Arachne (the Apache webserver) and upload their changed files to the webserver. Multiple authorship is possible but requires careful attention to changes made by each departmental author; there is no system for file lock-out to prevent overwriting.

Content includes a mix of static and dynamic pages, with some pages utilizing the scripting language PHP to achieve database pulls or uniform page formatting.

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Sites lack uniform design consistency partly because each static page contains the code for both design and page content. This means that it is easy to alter, accidentally, a single page's design when updating page content. This also means that it is quite difficult to change a site design without making changes to each and every page.

Databases that exist on the webserver are built by WTS only; they are manipulated and extended by only a very select few. Thus dynamic content is not as feature rich as possible.

Current process does not include any sort of workflow or approval before posting content live. Review of published material takes place once it is posted – live – to the webserver (if at all).

## High Level Requirements

### System requirements

- Locally installed and hosted.
- Standards-based, both administratively and operationally
- Development area isolated from production content.
- 'Natural' English URLs for ease of sharing, publication, and use.
- Selection process will favor systems that provide methodologies for integration and extension to meet the business needs of other applications in use at Brandeis and customization by WTS.

### *Publishing requirements*

- At least two 'modes' of operation available: one for less-experienced publishers and one for more advanced publishers.
- Easy-to-use templates, utilizing standard web languages.
- Workflow and approval process that may be utilized by publishers.
- Versioning and audit trails.

### *Content requirements*

- Ability for users to publish new pages or sections without WTS intervention.
- Separation of content from design templates. Access to design templates should be able to be restricted to administrators [authorized for each site](#).
- Dynamic generation of site navigation; added pages will not require editing of 'sidebar navigation'.
- Scheduling of content release (allows advanced posting for future release and expiry of content).
- Desired: notification of pending expiring content.

## **Assumptions/Dependencies**

- Workflow / approval process assumes that divisions will provide more than one person to be involved. Process requires a creator and a reviewer.
- Integration with LDAP for user base may require customized development by NetSys/MiddleWare and Architecture. Maintaining access control lists (ACLs) outside of CMS may also require customized development.
- Sites implemented with the CMS will be entirely hosted within the CMS system; hybridizing files within a single folder would be very difficult. [i.e., any special functionality desired outside of the CMS capabilities will have to have a sub-folder URL].
- Sites maintained by the CMS may not be available for maintenance outside of the CMS using direct editing or desktop WYSIWYG editors.

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- Implementation will be conducted in a phased approach, with basic functionality delivered first and an advanced feature set to come once LTS employees are familiar with operation and development in the system.
- Adoption of a CMS does not replace the need for careful consideration of web content and how sites interoperate and reference similar materials. There will remain a need for careful review of Information Architecture, pertinence to audience, and site cohesiveness. It is expected that WTS will continue to serve content stewards in this capacity after the CMS is in place.

## Other Considerations

### **Constraints:**

**Time:** The need for the CMS is great and the problems are becoming more acute with each new web publisher. Thus, our evaluation period is limited by our need to provide a solution quickly and effectively.

**Cost:** Budget constraints will be a factor in the selection of a CMS.

### **Concerns:**

Adoption of a new system may mean that there is yet another access control list (ACL) to maintain. Ideally ACL management would map to the developing Brandeis identity management system. Merging ACLs would make good business sense, as management of content in the CMS is similar to management of content (calendar items, news items, bulletin board participation, directory listings, etc.) in other systems.

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**Estimated Timeframe for Delivery**

Sept -Oct 30	Requirements documents drafts
Oct 24– Nov 4	Community review of documentation
Oct 31-Nov 30	Product review / interview process
Oct 24	Engage technical evaluation team
Oct 28	Engage functional evaluation team
Oct 24-Nov 30	Consult peer institutions on findings / experience
Nov 15-Dec 10	Decision-making process
Dec 10	Decision point; product selected
December	Sign contract (assuming vendor supplied product)
Dec 15-Jan 10	Installation / configuration. infrastructure build out / support
January	WTS test implementation begins
January	Implementation test phase; convert target sites
Jan 30	Beta test by end users begins; select group of end users invited to beta test system

**Goal**

CMS in place, with configuration complete and pilots under way **in January 2006**.

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# Appendices

## Appendix 1: Terms & Definitions

CMS – Content Management System. This is different than a course management system, which is sometimes also abbreviated as CMS. Refers to the management and publication of public web content.

Content – for the purposes of the CMS project, content is considered to be *material that is posted to the Brandeis public website to advertise, explain, promote, and illustrate the activities of the academic divisions, programs, offices, research and activities of the university*. Additional discussion of the definition of content can be found in the Appendix.

Community stakeholders – members of the Brandeis community that produce, edit, design, or are responsible for web content.

Primary Stakeholders – key members of the Brandeis community that either produce significant amounts of web content or are responsible for supporting significant numbers of community members who produce web content

FTP – file transfer protocol. The current method used to connect to the Brandeis webserver to publish web content. An insecure protocol.

XHTML – a markup language with the same expressive possibilities as HTML, but with a stricter syntax. The successor to HTML, became a WWW Consortium recommendation in 2000. Strict markup allows for delivery to many different devices (such as mobile devices) and for increased accessibility.

Accessibility – ensuring that web content is usable by all people, especially those with disabilities as described in Section 508 of the Rehabilitation Act.

Alt tags – part of building accessible content, alternate (shortened to alt) tags describe images so people with visual impairment can experience graphical web content.

WYSIWYG editor – literally, “what you see is what you get” editor. A desktop application that gives developers a visual environment much like a word processor in order to build pages.

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## Appendix 2: Proposed team membership

### Technical Evaluation Team

Name & Title	Department (Group)
David Wisniewski	LTS (WTS)
Lori Dembowitz	LTS (WTS)
Kelsey Libner	LTS (WTS)
Mike Pino	LTS (WTS)
Ian Rifkin	LTS (WTS)
Peter Williams	LTS (WTS)
Josh Wilson	LTS (WTS)
Zachary Shaw	LTS (WTS)
Ryan Williams	LTS (Middleware)
Elliot Kendall	LTS (NetSys)
John Turner	LTS (NetSys)
TBD	LTS (TechDesk)
TBD	LTS (ITRC)

### Functional Evaluation Team

*TBD*

### Communications Team

Name & Title	Department (Group)
David Wisniewski	LTS (WTS)
Lori Dembowitz	LTS (WTS)
Kelsey Libner	LTS (WTS)
Ian Rifkin	LTS (WTS)
Josh Wilson	LTS (WTS)

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