Creating
an Internal CMS

Staff Schedules

Library Stats

E-Journals

Library Hours
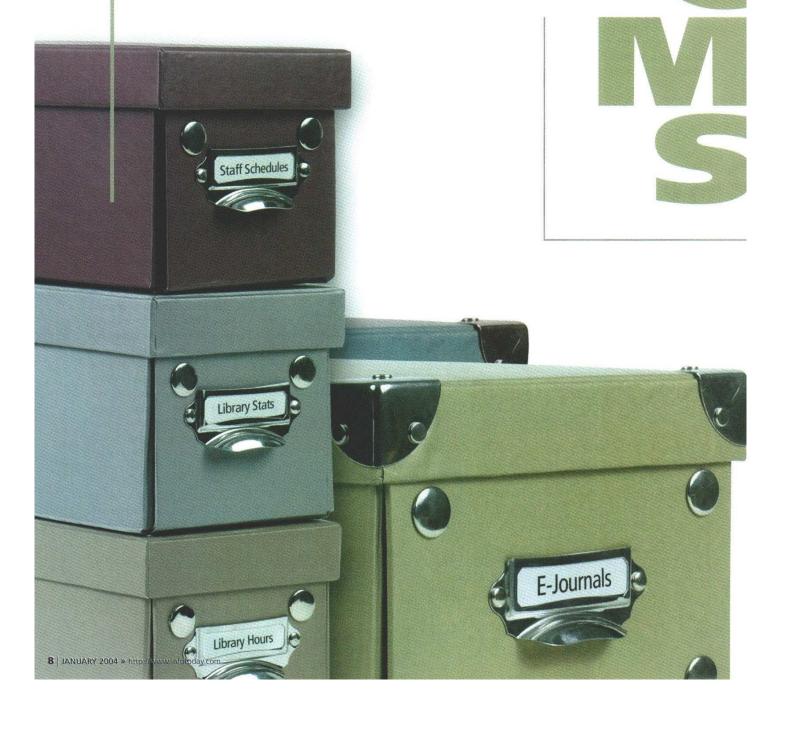
ontent anagement ystem

BY GREG SENNEMA

Here at Calvin College, we created Hobbes, a hybrid of **CMS and intranet** that **organizes Web site content and a variety of internal tools** to help our librarians complete their daily tasks.

When I became digital resources and reference/instruction librarian in 1999 at the Hekman Library at Calvin College and Calvin Theological Seminary, one of my first tasks was to redesign the library's Web site. Like many of you who maintain Web links to library resources, I quickly learned that offering access to a large number of resources from an even larger number of static Web pages can never really be described as efficient or professionally fulfilling.

In recent years, many libraries have created dynamic Web sites that are database-driven, that is, maintained and populated with content stored within what can be loosely termed a content management system (CMS). In 2001, Jed Koops, the Hekman Library systems programmer, and I created a CMS called Hobbes (library staff liked the play on the words "Calvin and Hobbes"). Since then, Hobbes has grown into a hybrid of CMS and intranet to include not only Web site content, but also a variety of internal tools used by librarians to help them complete some of their daily tasks.

Hekman is a small academic library serving more than 4,200 students, 370 faculty, and many community patrons. The majority of the library's 1.7 million items (books, e-books, journals, e-journals, microfiche, government documents, etc.) are spread across 100,000 square feet over four floors. Hekman employs the full-time equivalent of 17 staff, including eight professional librarians who also serve as liaisons to all of the college's 25 academic departments. Access to all library resources is provided through the online catalog (Sirsi), a digital media archive (Sirsi), and our Web site, the Hekman Digital Library (HDL). Since its creation in 1997, the HDL has grown from a mundane list of links and library information to the primary point of access to all of the library's resources. In 2001, I created the current version of the HDL.

Calvin and Hobbes: Managing Our Content Online

Hobbes is a Web-based tool that uses Common Gateway Interface (CGI) scripts written in Perl to store, query, and return results from data stored in

»

a series of related SQL tables. Because it is Web-based, librarians can easily manage data without knowing Perl or SQL and can be authenticated into the system using the college's existing on-line directory. By authenticating through a continually updated college database of login names and passwords, we did not need to create our own. Users added to the Hobbes environment have imme-diate access without needing to remem-ber yet another ID and password.

As a CMS, I initially envisioned Hobbes as a tool to help me to efficiently manage the library's Web pages, specif-ically the growing number of subscrip-tion-based resources. In the months af-ter Jed and I implemented Hobbes, we realized that it could be used to host tools that served the library's internal communication needs as well. Over the course of 2 years, we added tools as they were thought of and created, and placed them according to their function under tabs that are strung along the top of the Hobbes environment (see Fig-ure 1). Each librarian is given access to the tabs and tools she needs based on her profile within Hobbes. Here I will describe each tab and some of the ma-jor tools (or tables) placed within it. With each description, I have included our label in parentheses to help you compare what you are reading to the screen shots. To see how some of Hobbes' resources are displayed to the public, please visit the HDL at http://www .calvin.edu/library.

Manager Tab (Manager)

The Manager tab is used primarily by Jed and me to administer the con-tents within Hobbes. Since there are quite a few tools under the Manager tab (see Figure 1), I'll briefly explain a number of these before moving on to the functions of the other tabs.

Databases (TofDbs): Each research database record stored in a table of data-bases (TofDbs) contains the following

Figure 1: This screen shot shows Hobbes' Manager tab contents with the icon table displayed.

fields that allow the resources to be displayed on the HDL in a variety of helpful ways:

- Alphabetical—Based on the first letter; can also include See Also references

- Type—Citation index, abstracts, full text

- Authentication—Whether the resource is accessed through IP authentication, for free on the Web, on a CD-ROM, or through a print index

- Full-text type—Describes a database's full-text content, such as journal or newspaper articles, e-books, or even primary source historical documents

- Vendor—Most useful for our librarians

- Subject—In our case, based on the college's academic disciplines

- Peer-reviewed/refereed—Has a field where instructions can be included on how to limit a database search to peer-reviewed/ refereed articles

- Citation examples—Includes a field that shows examples of citation styles for material found in the database. We created a Web page on how to cite electronic resources, and this page displays

a list of full-text databases. When clicked, it brings the user to an information page that offers examples of how to cite the full-text content.

- Descriptors—Terms that describe the database and its contents, making it possible for patrons to search for appropriate databases. However, we turned off the search feature on the HDL, because many patrons thought that by searching for a database, they were actually searching the contents of the database itself.

Microforms (TofMic): Web pages that describe our microform sets are stored as records in a table of micro-forms. In addition to a brief description of the microform set, each TofMic record includes detailed contents information. For some sets, this means a reel-by-reel description or a detailed bibliography. For sets that have individual MARC records in our online catalog, we display a WebCat search box that limits searches to the appropriate microform set.

Reference (TofRef): The college's academic departments each have an assigned library liaison. One role of the liaison is to maintain a Web page that highlights library resources that are important to the department, such as databases, microform sets, and refer-ence sets. Each liaison can add Web re-sources that she considers important for her departments.

Staff (Staff): In addition to display-ing staff information on the HDL, cre-ating a table of staff members allows each of the librarians to be authenti-cated into Hobbes. Like TofDbs records, the staff record contains many fields that allow them to be used in a variety of ways:

- Login name (based on the college's LDAP server)

- Status—Librarian, support staff, student assistant

- Office location, office hours, and phone number

- Responsibility—These show up in the HDL's A-Z Index, so that users can look for, say, the cataloging librarian

- Birthday (so we all know when to expect treats!)

- Access level—This determines the Hobbes tabs (and tables within the tabs) that each staff member has access to. For example, the circulation manager only has access to the Lib Hours, Minutes, and Lib Resources tabs.

A-Z Index of this Web site (A-Z Index): Entries that appear on the HDL's "A-Z Index of this web site" bring together records from several tables into one place, including the A-Z Index table, the TofDbs, TofMic, TofRef, and Staff table (see Figure 2).

Figure 2: The HDL's A-Z Index of this web site displays information pulled from several tables. A-Z Index records display icons from the Icon table.

Icons (Icons): As Figure 2 shows, we made the A-Z Index more visually appealing after implementing a database of icons that is itself linked to from other Hobbes tables.

E-journals (Ejournal): Based on the experience gained from implementing Hobbes, Jed and I decided to try our hand at managing our growing collection of e-journals. The Ejournal tool in Hobbes is designed to accept a col-

lection in the form of batch loads of comma-delimited files (created from lists from aggregated databases and our own e-journal lists). Using a complicated script, the tool creates e-journal records for each title based on ISSN; any subsequent e-journals that are loaded as part of another collection are not added as unique records, but rather as a holding to the main e-journal record. Initially displayed to the public within a separate database called the E-journal Locator, we eventually figured out how to import these e-journal records into our online catalog, thereby offering our patrons one place to find all our journals, print or online.

Passwords (Passwords): This table contains password records for resources that require login information, such as e-journals, database administrative modules, or database usage statistics. Creating one place for these allows the librarians to easily share this important information.

Quotations (Quotes): The HDL home page displays a unique quote each time it is loaded, and each of these quotations is stored in the Quotes database. Additional tables control the "message of the day" (WebCat motd) that appears in the banner of our online catalog.

Reference Desk Tab (RefDesk)

The default Hobbes screen for the reference librarians is the RefDesk tab, which displays the tools they use while working at the reference desk. The top half of the screen displays any questions that have been submitted by a patron using the Ask a Librarian Web form. The librarian can choose to immediately answer a question or assign it to another librarian. (See Figure 3.)

Statistics for all these questions are internally tabulated and can be accessed in Hobbes' Stats tab.

The bottom half of the RefDesk screen displays a RefBlog (a Weblog) where librarians post reference-related entries. RefBlog entries can also be tagged as sample reference questions to supply anecdotal evidence in statistical reports. All of the information within the RefDesk tab is searchable.

Figure 3: The RefDesk tab displays questions to the Ask a Librarian service as well as entries on the RefBlog.

Reference Desk Schedule Tab (RefDesk Sched)

With constant shift changes being scribbled on the print copy of the reference desk schedule, or with shifts being missed because they could not consult the schedule from home, our librarians welcomed the addition of an online reference desk schedule in Hobbes (see Figure 4).

Figure 4: The reference desk schedule displays 4 weeks at one time.

Four weeks' worth of shifts are displayed at one time, and changes can be made simply by clicking on a librarian's name in a particular time slot.[1]

Library Statistics Tab (Stats)

Before Hobbes, librarians kept track of their own statistics in individual Microsoft Excel files, a program that many knew well enough to enter data into, but not well enough to creatively display or manipulate that data. Various statistical tables are included in the Stats tab, as is a utility to create reports based on date and other criteria.

Library Meeting Minutes (Minutes)

The Minutes tab displays folders that contain minutes from the various groups of library staff that hold regular meetings. After being completed in Microsoft Word, the secretary logs into Hobbes and uploads the minutes into the appropriate folder for future reference. Also, an e-mail with the attached minutes is distributed to staff members who have this preference selected in their staff table record.

Library Resources Tab (Lib Resources)

While the librarians are able to share documents on a common drive on the campus network, it became apparent that some information could be better shared by being displayed within Hobbes. The Lib Resources tab contains a wide variety of links to resources such as a fund status report (used by liaisons to track departmental book budgets); employee policies; evaluation documents; and library labels, signs, and graphics.

Library Hours Tab (Lib Hours)

Hekman Library's hours are not easy to describe with text, so they are displayed on the HDL in a 2-month calendar format. After being incorporated into Hobbes, the tedious process of updating this Web page was replaced by a table that utilizes an existing calendar.

Library News Tab (LibNews)

After attending a session on RSS[2] at the 2003 Computers in Libraries conference, it didn't take me long to wonder how we could incorporate this into Hobbes, and it took even less time for Jed to actually implement this feature. The LibNews tab displays information from RSS feeds, with the name of the feed on the left and the contents of the feed displayed within a box on the right.

Database Maintenance (DB Projects)

This tab contains links to the administrative modules of five locally created databases.[3] As with e-journals, records can be added, edited, and deleted, and bulk amounts of data can be imported using delimited files.

Bookmarks (Bookmarks on bar beneath the tabs)

Since Hobbes displays information based on a librarian's login, we were able to add some tools that provided unique data for a given librarian. For example, each person is able to upload his or her browser bookmarks from the office computer to use at the reference desk or from home. Librarians are also able to upload liaison newsletters into Hobbes, which in turn are displayed on their HDL staff page.

Jed Koops (seated) and the author are still tweaking Hobbes.

The Future of Hobbes

Jed and I created Hobbes on the fly, with no blueprint for what the "product" would eventually become. Consequently, we gave many of the resources names and locations that made sense to us, but would potentially be quite

> "The default Hobbes screen for the reference librarians is **the RefDesk tab,** which **displays the tools they use** while working at the reference desk."

confusing for the librarians who use the system, or for our successors were we to leave Calvin. ("Uh, what exactly is a 'Tofdbs_cit_label'?") With this in mind, most Hobbes tools have a text box for instructions that can uniquely identify the resource, and say why the tool was created and what HDL pages contain its dynamic data. (See Figure 1.) In the near future, I plan to flesh out these instructions as we consider plans to make Hobbes control the remaining HDL pages. From time to time, we find other ways of displaying the data, and as other tools are added, we rename, recreate, and reorganize some of the tabs.

Even though Hobbes is yet another resource vying for attention in already-

full schedules, it was not difficult to convince the librarians that Hobbes was something they should be using. They like that library information has been moved from files on a shared network directory to an environment where it can be stored, displayed, and manipulated for the benefit of both the library staff and the patrons we serve.

The biggest challenges that we face are the maintenance required to keep Hobbes' information up-to-date and keeping the complex scripts working properly. Creating a CMS like Hobbes required extensive programming skills. Despite Hekman Library's relatively small size, I was fortunate that it also employed a systems programmer. Other libraries considering an undertaking like Hobbes would not only have to evaluate the skills of available employees,

but also consider the time needed to create and maintain such a system.

Greg Sennema is digital resources and reference/instruction librarian at Calvin College and Calvin Theological Seminary in Grand Rapids, Mich. He holds a master's of information studies from the University of Toronto. His e-mail address is gsennema@calvin.edu.

References

1. For additional information, see Sennema, Greg. "Managing the reference desk online." *Reference Services Review* 31 no. 3 (2003): 257–263.
2. For additional information on RSS, see Tennant, Roy. "Feed your head: keeping up by using RSS." *Library Journal* 128 no. 9 (2003): 30.
3. You can find information on these five databases at http://www.calvin.edu/library/databases/index.stm. See also Sennema, Greg. "The Christian Reformed Church Periodical Index: a local solution to indexing periodicals."

Journal of Religious & Theological Information 5 no. 3/4 (2002): 119–134.

Further Reading

Adalian, Paul T. and Judy Swanson. "Locally developed web-enabled databases: new roles and opportunities for libraries." *Reference Services Review* 29 no. 3 (2001): 238–253.

Brown, Katrina L. and Anne M. Candreva. "Managing database-driven web content." *Library Journal netconnect* (Fall 2002): 24.

Browning, Paul and Mike Lowndes. "Content management systems: who needs them?" *Ariadne* 30 December (2001); http://www.ariadne.ac.uk/issue30/techwatch.

Fagan, Jody Condit. "Transition to a unified system: using Perl to drive library databases and enhance web site functionality." *The Electronic Library* 19 no. 3 (2001): 168–179.

Klein, Leo Robert. "Your web site—mixing up web site management." *Library Journal netconnect* (Spring 2003): 28.

Roberts, Gary. "Designing a database-driven web site, or, the evolution of the Infolguana." *Computers in Libraries* 20 no. 9 (2000): 26.

Westman, Stephen. "Database-backed library web pages." *The Electronic Library* 19 no. 6 (2001): 424–432.