

Weblogs: Their Use and Application in Science and Technology Libraries

Randy Reichardt
Geoffrey Harder

ABSTRACT. Weblogs, or blogs, emerged in the late 1990s on the Web, quickly becoming a new way to communicate ideas, opinions, resources and news. Since that time, the community of blogs has grown to encompass specific subject areas of study and research. This article briefly discusses the history and background of blogs, including blogging software. Literature searches suggest very little has been published on subject-specific blogs in scientific and technical publications. Applications in science and technology librarianship are discussed, including team and project management, reference work, current awareness, and the librarian as blog mentor for students. *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <http://www.HaworthPress.com> © 2005 by The Haworth Press, Inc. All rights reserved.]*

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Randy Reichardt, MLS, is Engineering Librarian responsible for Chemical/Material and Mechanical Engineering, University of Alberta, Edmonton AB (E-mail: randy.reichart@ualberta.ca). Geoffrey Harder, MLIS, is Biological Sciences and Computing Science Librarian, and Manager of the Knowledge Common, University of Alberta, Edmonton AB (E-mail: geoffrey.harder@ualberta.ca).

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INTRODUCTION AND BACKGROUND

What Is a Weblog?

In very simple terms, a weblog, or blog, is a Web site resembling a personal journal that is updated with individual entries or postings. The entries are dated, and in many cases, assigned category headings and keywords. Blogs often appear as a two or three column Web page, with one or more columns featuring lists of links to other sites of related or common interest. Essentially, a blog is the online equivalent of a paper diary, reading list, newspaper, and address book all rolled into one.

A distinguishing feature of blogging software is the facility to automatically archive entries, allowing stories and postings to be searched, browsed, and reviewed at any time. As with all online content, the utility of a weblog's archive is only as good as is the lifespan of the Web site. Nevertheless, this archiving function is a timely and useful feature now that major search engines are indexing weblogs.

The intellectual content of blogs ranges from the very personal to the very practical, from tales of shopping adventures to detailed logging of corporate projects. Blog entries can contain news items, photographs, information, and links of interest based on the subject coverage. Personal blogs are often used as a means to share opinions and editorials covering events of interest to the writer. Subject-specific blogs can focus on a single topic, or on broader discipline divisions in which issues of interest to those working in that area are posted. An example of the former includes blogs devoted to the periodic table (Heilman, accessed December 7, 2004) or mass spectrometry (Murray Mass Spectrometry Group, accessed December 7, 2004), and of the latter, a blog covering any and all things related to nanotechnology (Lovy, accessed December 7, 2004). Blogs are commonly solo projects, but are also extremely successful as community projects. Slashdot's "News for Nerds. Stuff That Matters" typifies the community blog, as demonstrated by its core group of authors and thousands of story-seekers who contribute news items and ideas for the site. Essentially, weblogs allow for simplified Web publishing (Lindahl 2003).

History

Dave Winer, creator of Scripting News and current Harvard weblog editor, writes that the first weblog was the first Web site created by Tim Berners-Lee, <http://info.cern.ch/>, while he worked at CERN. Berners-Lee used the site to point to Web sites when they first appeared. (This link is no longer active, but has been archived at <http://www.w3.org/History/19921103-hypertext/hypertext/>

WWW/News/9201.html.) Rebecca Blood suggests the “What’s New?” site from Mosaic, which ran from June 1993 until June 1996, laid the foundation for what blogs would become. The site provided links to the newest and most interesting Web sites out there, and was updated a few times a week (Blood 2002, p. 2). Jorn Barger first used the term “weblog” in December 1997, on his site, Robot Wisdom. In her essay, “Weblogs: A History and Perspective,” Blood writes that in 1998, there were only a handful of sites that one would now consider to have been weblogs. However, blogs began growing in number, even until the summer of 1999, when the first free blogging software and tools appeared. After this time, the number began to increase exponentially (Blood 2002). A natural outcome was the beginning of the “blogosphere,” a term used to describe the larger, burgeoning community of bloggers, now numbering in the millions.

The idea of online communities is anything but new, and can be traced back to the creation and rise of BBSs (Bulletin Board Systems) in the late 1970s. Begun in Chicago in early 1978, BBSs spread quickly and were very popular until the advent of e-mail, electronic discussion lists, discussion groups, and the browseable Web. The notion of online community-fostered via BBSs continues to exist in today’s online forums and weblogs (Rapp 2003). In today’s world, there are many different applications designed to facilitate online communication and collaboration, a segment of which have commonly come to be known as “social software.”

Social software “. . . refers to various, loosely connected types of applications that allow individuals to communicate with one another, and to track discussions across the Web as they happen” (Tepper 2003). Boyd identified three principles of social software, which he suggests paint a picture of a “bottom-up” rather than a “top-down” application of the technology. In his view, social software offers: “Support for conversational interaction between individuals or groups”; “Support for social feedback”; and “Support for social networks” (Boyd, accessed December 7, 2004). Social software invites individuals to collaborate, share, and interact with one another. It is an invitation. It is not something foisted on individuals from above. In many ways, blogging fits this profile. As Boyd suggests, bloggers and their blogs form an interlaced network of contacts and communications: stories, links, discussions, and dialogue interconnected across space and time: Social software reflects the “juice” that arises from people’s personal interactions. It’s not about control, it’s about co-evolution: people in personal contact, interacting towards their own ends, influencing each other. But there isn’t a single clearly defined project, per se. It’s a sprawling, tentacled world, where social dealings are inductive, going from the individual, to a group, to many

groups and, finally, to the universe. Or at least the itty-bitty universe of all people using the Internet.

Blogging Software

The popularity of blogging is due in great part to the development of many simple, out-of-the-box products that allow for the uncomplicated creation and maintenance of a blog. A quick Web search for "blogging software" reveals a wide spectrum of choices, from free hosted packages, requiring nothing more than an e-mail address and a witty blog name, to robust packages offering hardy content management systems, news aggregation, and other advanced features worthy of a sophisticated enterprise package.

In general, blogging software provides the author with an easy-to-use graphical interface for posting to the weblog. Most interfaces resemble the screen of a basic word processor; complete with familiar one-click formatting commands to change the look of one's text or to insert a hyperlink into a sentence. Once the content of the post has been typed or copied, it is often one more click "to post," at which time the posting (or entry) is automatically added to both the Web page and archive. The customization of blogging software allows for one author or many authors to post, often with permission settings that can restrict the editing, creating, or deleting powers of blog members. The same can be said for the "comment" feature, which many blog authors enable to allow readers of postings to add their reactions and commentary. Personal blogs thrive on feedback and responses to postings. However, it may not be in one's best interest to allow comments on all postings (particularly those where you wish to have the last word).

The point here is not to highlight or endorse any one package over another, but simply to suggest to the reader that the customization options are enormous and that neither one's budget nor expertise need be great in order to give blogging a try. Peter Scott's excellent site, "*Weblogs Compendium*," available at <http://www.lights.com/weblogs/>, offers a wide range of resources about weblogs, including lists of hosting services, tools, directories, and definitions.

LITERATURE SEARCH

Literature searches were conducted on eighteen major subject-specific databases in science, engineering, and agriculture, to determine if coverage of the weblogging phenomenon has reached the trade, or even scholarly journals in these fields of study. Results were restricted to a time period beginning in

the late-1990s, when weblogs first began to appear. Search terms used included: weblog (and its truncations), and a number of terms beginning with “blog,” including blogs, blogosphere, blogger, blogged, and blogging.

Databases that produced search results included: INSPEC, Ei Compendex, General Science Abstracts, Applied Science and Technology Abstracts, and Internet & Personal Computing Abstracts. Most of the articles retrieved from these searches appeared in trade journals such as *Online*, *Information Today*, *InfoWorld*, and *Technology Review*. Any scholarly articles found in these searches dealt with the technology of blogging (i.e., software, hardware, etc.) rather than the application and use of blogs in a particular field of research, such as engineering or physics.

The search was run on LISA: Library and Information Science Abstracts and Library Literature and Information Science Full-Text (LLISFT). The LLISFT search produced 27 results, and the search on LISA produced 29 results, some of which were irrelevant. While many of the citations retrieved were to publications of a general nature, examining the phenomenon of blogging, it is in the library literature that articles focusing on the application of weblogs to library issues and concerns have appeared. Topics such as k-logging, a term used for knowledge management blogging (Angeles 2003), blogging software in intranets (Fichter 2003), and use of weblogs to build communication and research skills (Embrey 2002) have appeared in the professional literature.

No articles were found which specifically discussed the use or potential use of blogs in a science and technology library setting.

APPLICATIONS IN SCIENCE AND TECHNOLOGY LIBRARIANSHIP

Managing Teams and Projects

Blogging software is a very useful tool for assisting teams to collaborate, focus, and communicate tasks and responsibilities that come with working together on projects. The advancement of e-mail has allowed for an accelerated method of sharing information—a gigantic leap forward, at least in terms of fleetness, from the snail-mail paper trails and telephone messages of the past (although the strengths of these latter methods often remain unmatched). The drawbacks of e-mail, which most have experienced, are the rapidity and bulk at which these messages can be delivered into one’s inbox. Often, a simple communiqué passed between team members can be transformed into a chain of messages preceded by “re:”, often doubling the contents of one’s inbox quickly. Even those who make the most of e-mail software’s sorting

options and folders can still experience the difficulty of trying to go back to find that one key piece of pertinent information that will answer the question at hand.

Blog postings and comments, unlike e-mail, create a time-stamped and often categorized trail of discussion that can be easily searched and browsed so that the former mishaps need not occur. Consider an e-mail asking team members' opinions on a new policy document. A flurry of e-mails batted back and forth between members is almost sure to occur, each requiring the context of e-mails falling prior and subsequent to its creation time in order to properly understand what is being discussed. A time stamped blog posting will automatically archive what was to be the original e-mail, allowing others to respond with their comments in a sequential posting pattern very easily interpreted by those who are involved in the discussion. The discussion is archived for all to read, and no one person is left "out of the loop" should they happen to delete any of the e-mails or bits of information from their inbox. This is only one small example of blogging at work.

The simplicity of blogging and the practicality of putting much of our shared information on a Web site, allows for easy searchability and up-to-the-minute awareness for all team members. Blog postings can move from topic to topic, and commenting features and cross-linking can allow for discussion threads to continue with communication trails that are both traceable and easy to access. Many discussions on electronic mailing lists would make excellent blogging fodder if they were to be posted in an archive that was easily searchable and available for comment.

A criticism of blogging is that it requires the reader to come to the Web site—a challenge that isn't perceived to be an issue with discussion lists and group e-mails, at least beyond the initial sign-up. However, many blogs have implemented notification features whereby readers can register for notifications of new blog posting and comments, with either all of the entry or only excerpts of the discussion to be forwarded to them. This "push" technology then reminds the reader that there is a place where they can go to read the posting, if in fact it has not already been delivered to them, regardless of whether they delete their e-mail or not.

RSS (Really Simple Syndication) feeds have also become a burgeoning means of accessing blogs and other types of digital content. Many blogging software packages automatically generate a so-called "syndicated" news feed, in simple terms, a news-channel summary of the blogs content. This neatly packaged, XML version of the content, allows newsreader software and Web scripts to display and repurpose the material in a variety of different ways. For example, users can subscribe to RSS feeds using any number of different free

or reasonably priced news aggregators (Scott, accessed December 7, 2004). These tools allow for filtered reading of the Web in a fraction of the time required for traditional Web browsing.

Beyond news aggregators, RSS feeds can also be parsed and displayed within a single page or site, delivering a one-stop current awareness service for interested readers. LISFeeds is a good example of a site that aggregates library-related RSS news feeds to provide library workers with a simple way to stay current. Other Web pages, such as a library resource guide on medicine, or perhaps a guide on physics, may have news feeds from a publisher of relevant scientific information embedded directly into the guide. BiomedCentral and Institute of Physics are examples of two publishers who have recognized these opportunities and who have recently begun to offer feeds of their own. (BioMed Central, IOP, both accessed December 7, 2004). These are but a few of the many ways that RSS feeds, particularly those originating from blogs, can be used within a library setting. The fact that blogging software can so easily provide a springboard for this form of dynamic publishing and syndication, speaks much to the blog's usefulness as a collaborative tool.

Reference Desk Blogging

The reference team of any library must regularly communicate all sorts of items: schedules, shift reports, breakdowns, changes to information resources, and other items of day-to-day library life. Again, e-mail and face-to-face discussion is often the communication vehicle of choice. However, e-mails in an already overflowing inbox can often be overlooked, and it's difficult to keep everyone up to speed when meetings and face-to-face encounters do not always involve the whole team. The traditional solution for many reference teams has been to develop a reference binder or book: an often overflowing and well-weathered bible of everything one needs to know while working a reference shift. This is all well and good, but, it is often difficult to alert staff to new items in the book, and many staff members grow so accustomed to finding information online that they understandably fail to keep themselves current on what has changed. Even if they do try, the book itself is sometimes not user-friendly. Tabs, post-it notes, dog-eared corners, and scribbles in the margin often make a difficult index for staff less familiar with its contents, especially when they are under pressure to find answers in a hurry.

A reference blog is one alternative that could possibly help this situation. A blog, like others previously discussed, can be quickly setup with permissions granted for all members of the reference team to post to and comment. Postings, given simple subject headings and concise topic headings, will be auto-

matically filed in the online archive, browseable by subject or date, and keyword searchable at the stroke of a hand. The Science Library at Loyola University maintains Sci Li Ref, described as “*keeping the reference desk staff up-to-date!*” (Science Library, Loyola, accessed December 7, 2004). A similar blog was created for the staff of the University of Alberta Libraries’ Knowledge Common, and has become a welcome tool for both training and communication amongst its members.

Student Blogging

Librarians working in public service, information, and reference, can encourage students working in groups to create blogs, to be used as a project management tools. For example, at the University of Alberta, students in the fourth-year mechanical engineering design course must work in groups of four on their capstone projects. The mechanical engineering librarian was approached by students interested in ways of managing the amount of information being shared between group members. Was there a way to deal with multiple e-mails, phone calls, paper trails? (See Figure 1 and Figure 2.)

With basic guidance and assistance from the mechanical engineering librarian, a number of these groups are using blogs as a central online location for information sharing, gathering, and comments. Minutes of their meetings, allowing for future reference to past decisions, are posted, as are links to sites of interest, including patents, and design examples.

Students working in a group of four, who make use of a weblog for their project, will shift their study habits and communication patterns accordingly. Group e-mails will drop considerably, as well as the need to phone and/or meet in person to discuss project concerns. In essence, the weblog’s existence will contribute to community building. “*On a large university campus, especially in a program that suffers from large class sizes, a blog can help students find each other and connect over similar interests*” (Radzikowska, accessed December 7, 2004).

The editor of *Design News*, Karen Auguston Field, believes engineers are best qualified to blog about technology. In her article, “*Why Every Engineer Needs a Weblog*,” Field suggests that by creating a blog in an area of expertise or interest, engineers can connect with those sharing the same curiosity and zeal for the subject. The engineer would also be provided the forum to critique less credible sources, which might be misleading or inaccurate (Field 2003).

The blogs used for design project management by students in the University of Alberta mechanical engineering design class were created using software from Blogger.com. Blogger was chosen because of its ease of use and its capability to host blogs on its own site.

FIGURE 1. University of Alberta Knowledge Common Staff Blog

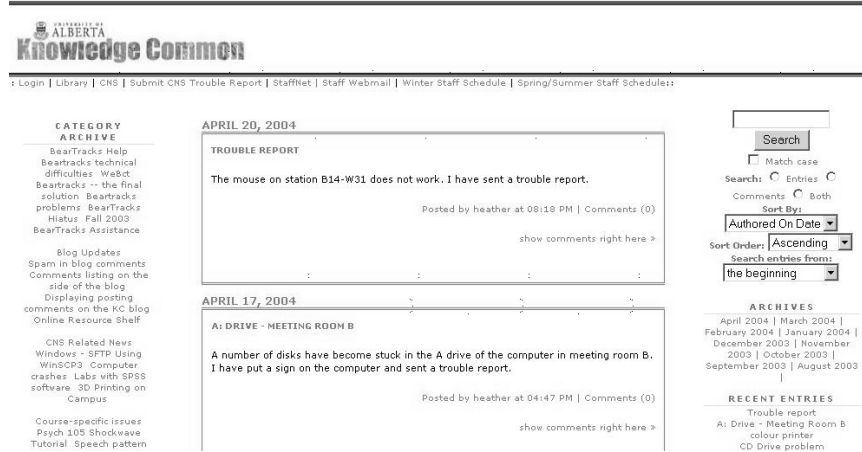
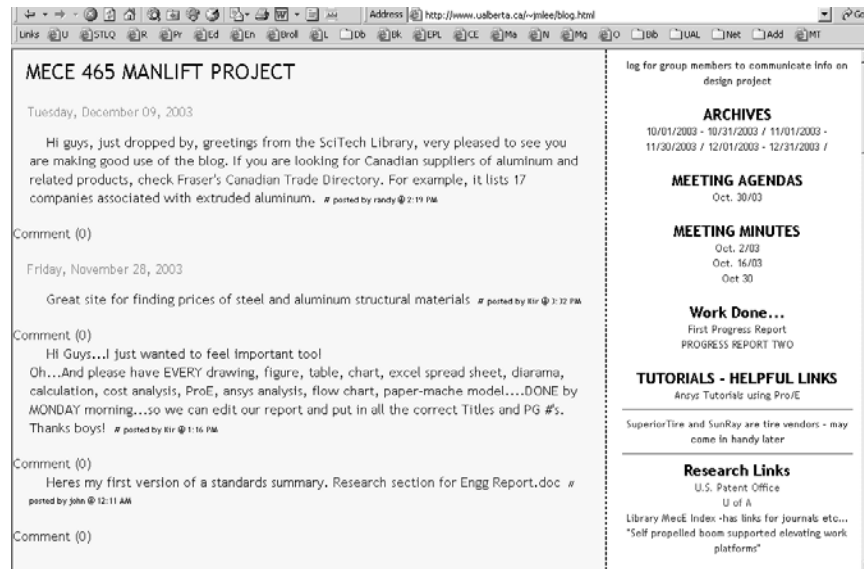


FIGURE 2. Example of a Student Design Group Blog in Mechanical Engineering



Reference and public services librarians who choose to encourage students to set up their own blogs need to be familiar with this software, or others of a similar nature. There are two reasons to do so: to help students create their first blogs, and to be a resource for questions in the future. One of the features of Blogger's editing screen is a Knowledge Base, which includes good instructions on posting, making links to other sites, editing, deleting, and more.

The option exists for the librarian to offer to participate as a project collaborator with one or more student groups. The librarian can monitor the blog(s), and provide input, information, or assistance if needed, and the occasional appropriate posting. Such activity could suggest a new, perhaps emerging model for a different kind of reference service, one in which the librarian responds to queries by regularly checking users' weblogs. Of course, having to check more than a handful would quickly become unmanageable and overwhelming. One solution is to make use of the blogs' RSS feeds to very quickly and unobtrusively survey how the students are progressing.

Are libraries and librarians willing to support initiative to provide weblog support for their community? The University of Minnesota Libraries think so: "It is our goal to develop a blog server through which everyone in the university community (faculty, staff, and student) can have access to their own individual blog" (University of Minnesota Libraries, accessed December 7, 2004). Other campuses are also providing students and staff with the means to create their own blogs. Though not library-initiated, the Berkman Center for Internet & Society at Harvard Law School hosts "Weblogs at Harvard Law," which allows anyone with a harvard.edu e-mail address to create their own weblog. (John Harvard's Journal 2004) Seton Hall University students can create their own weblogs with a service provided by the Humanities Division and the New Media Journalism program ([Jerz], accessed December 7, 2004).

Current Awareness for Science and Technology Librarians, Scientists, and Engineers

The growth of weblogs has resulted in the evolution of their coverage, from subject-general to subject-specific. A few general library weblogs began appearing in the late 1990s, and continue to this day. Since then, a number of weblogs created and maintained by science and technology librarians have emerged. These weblogs provide coverage of issues of importance to librarians working in the science and technology environment (Reichardt, accessed December 7, 2004; Lavallé-Welch, accessed December 7, 2004; Dupuis, accessed December 7, 2004).

Weblogs covering science and technology subjects, such as nanotechnology, are providing subject experts with a new way to stay current in their areas of

research. Users and patrons of science and technology libraries are not being left out of the weblog loop either, although the movement in this direction is emerging at a much slower pace. The Rowland Institute Library Blog features “links to websites, articles and resources of interest to Rowland scientists as well as material about issues concerning science libraries” (Eastman, accessed December 7, 2004). Visit the homepage of the Olin Library, at the Franklin W. Olin College of Engineering, and you are greeted with The Olin Library Blog, which serves as a library news portal for its users (Olin Library, accessed December 7, 2004).

CONCLUSIONS

With weblogs now providing coverage of issues relevant to science and technology librarians and their clients, we are seeing the beginning of a shift in the communication habits and patterns of these groups. Weblogs are providing an alternative to multiple electronic discuss list subscriptions and ever-increasing amounts of e-mail, as well as a new mechanism for current awareness and professional development. Librarians in science and technology, and in fact all areas of librarianship, can employ blogs in project and team management as well as reference desk training and scheduling. As mentors, librarians can assist students in creating and maintaining weblogs for their assignments and projects. This work can be viewed as an extension of reference service. The challenge for librarians is to become familiar with the weblog and its potential, and explore new ways to further its development and application in science and technology librarianship.

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