
Providing Reference Service in Our Sleep

Using a FAQ Database to Guide Users to the Right Sources

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Guest Columnists**

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This is my first column as the editor of the new Management column. I am heartily in favor of a column on managing reference and user services departments. In my career as a librarian, I have managed collections ranging from as small as a popular books collection in a public library to the largest library at Purdue University. And I am looking for ideas on the broad range of topics that relate to running a reference or public service department and for writers to put those ideas into print. Future column topics that I have in mind are mentoring and advising librarians experiencing “burnout,” expert systems in reference work, and even something as practical as barcode scanning programs to check for missing books and misshelved books. I hope the column has broad and practical appeal and application. I encourage you to suggest column topics and to become an author and write on any successful reference programs or services.

I picked the Business FAQ developed by the University of Pennsylvania for the first column because it is a practical, yet innovative, idea for how to connect patrons with the right source. Michael Halperin, director of the Lippincott Library at University of Pennsylvania, recommended Karen Anello and Brett Bonfield as authors for the article. They have stepped up to the task of explaining the reason why the Business FAQ was developed, how it works, and how it has been expanded to nineteen other business libraries. Business librarians will want to seriously consider joining this group. Nonbusiness librarians can do what Purdue University has done, and use the FAQ idea in other subject areas.—*Editor*

In a world of Web searching and instant messaging, library users expect to find instant answers on our Web sites. Unfortunately, among the more difficult questions to answer on a Web site are the most basic: “where do I start my search?” and “which database should I use?” Libraries have tried compiling lists of sources, annotating the lists and organizing them by subject, and even designing searchable databases of these annotated lists, but our users still have problems getting to the right source to answer their questions. The old answer, “you just have to ask the librarian,” is not workable any more now that students and faculty expect to be able to use the library from wherever *they* are.

At the Lippincott Library of the Wharton School at the University of Pennsylvania (Penn), another way has been found to meet users' demands: instant access to a storehouse of answers to their questions. This storehouse consists of more than five hundred business questions and answers that can be displayed by category or searched by keywords. Instead of following a linear path through Penn's Web page,

users simply type in their question and an answer appears. The storehouse was named the Business FAQ and is referred to as the FAQ.

BACKGROUND ON LIPPINCOTT'S BUSINESS FAQ AND OTHER COOPERATING BUSINESS LIBRARIES

The FAQ was developed jointly by Penn's Lippincott business librarians and librarians from Penn's library's information technology department. Oracle was used for the database backend and Perl for the Web interface. The FAQ's Perl code uses Perl DBI to connect to the database and FastTemplate to separate the HTML code from the variable data.

Initially, the FAQ was used by Penn library staff to capture standard responses to recurring questions. This database then became the foundation for a patron-focused knowledge base that would point users to the places on the Penn Web site where information was organized for their benefit and where they could find answers to their questions. These places included the list of business databases to which Lippincott subscribes, the list of selected Web sites recommended, the printed resources kept at the reference desk, and information about Lippincott, the Wharton School, and Penn. The editorial decision was made that the FAQ would not replace any information sources for patrons, or even supplement them: It would simply guide patrons to the resources that would most likely meet their needs.

In the past three years, the FAQ has evolved into more than a tool for helping students. It is used to train new library interns and staff members, and experienced librarians find it useful in refreshing their memory or checking their reference recommendations for completeness.

Cooperating Libraries

As the FAQ developed, it became clear that this was an opportunity to create a reference equivalent of "shared cataloging." In 2004, Lippincott began sharing the FAQ with Columbia University's Watson Library. The goal of this arrangement was to create a common database of reference questions and answers that would reflect each institution's resources and queries. The Business FAQ is now shared by nineteen libraries, though not all of them have released their version of the FAQ to the public (see figure 1).

Each of these institutions is given access to the information collected in the FAQ and assumes the responsibility for its local development and management. Although no fees are assessed by Penn, libraries assume the indirect start-up costs involved in familiarizing staff members with the FAQ's public and administrative interfaces and with its workflow procedures. Each school edits content to reflect its resources, environment, and users. Their attention to these details and

Figure 1: Business Libraries Participating in the FAQ Project (through October 2006)

- University of Alabama, Angelo Bruno Business Library (<http://brunolib.cba.ua.edu>)
- Boston University, Frederick S. Pardee Management Library (www.bu.edu/library/management/index.html)
- Columbia University, Thomas J. Watson Library of Business and Economics (www.columbia.edu/cu/lweb/indiv/business/index.html)
- Copenhagen Business School, Copenhagen Business School Library (<http://uk.cbs.dk/library>)
- Dartmouth College, Feldberg Library (www.dartmouth.edu/~feldberg/business/index.php)
- Duke University, The Ford Library (<http://library.fuqua.duke.edu>)
- Emory University, Goizueta Business Library (<http://business.library.emory.edu>)
- University of Michigan, Kresge Business Administration Library (www.bus.umich.edu/KresgeLibrary)
- Michigan State University, William C. Gast Business Library (www.lib.msu.edu/branches/bus)
- Massachusetts Institute of Technology, Dewey Library (<http://libraries.mit.edu/dewey/index.html>)
- New York University, Elmer Holmes Bobst Library (<http://library.nyu.edu>)
- Princeton University, Pliny Fisk Library of Economics and Finance (<http://firestone.princeton.edu/econlib>)
- Purdue University, Management and Economics Library (www.lib.purdue.edu/mel)
- Stanford University, J. Hugh Jackson Library (www.gsb.stanford.edu/library)
- University of Texas, Business Information Center (www.lib.utexas.edu/subject/business)
- Tulane University, Turchin Library ([ww.freeman.tulane.edu/turchin](http://www.freeman.tulane.edu/turchin))
- University of Western Ontario, Business Library (www.lib.uwo.ca/business)
- University of Wisconsin, Business Library (<http://business.library.wisc.edu>)
- Yale University, School of Management Library (www.som.yale.edu/ssl)

Note: For easy access to several early adopters of the FAQ, go to <http://datafarm.library.upenn.edu/pennlibraryfaq/faqmain.htm>. Click on the adopter's name for a screenshot of their FAQ site, and click on the screenshot to go to their live FAQ site.

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to their users' needs benefits all participants—whenever any FAQ partner enters a new question or updates an old question, its work is posted to the system for others to include in their version of the FAQ or to adapt for their needs. This model of casting a wide net, both for questions and answers, and of distributing the work involved in crafting answers, is proving to be a successful instance of technology extending librarians' ability to allocate work efficiently and serve their patrons effectively.

EXTENDING THE FAQ IDEA TO NONBUSINESS AREAS

The Business FAQ proved to be so successful that other areas of Penn's library system utilized the program to create a Library FAQ. Like the Business FAQ, it is searchable by keyword. For instance, a search on "fiction" returns answers to the questions, "How can I find works of fiction for pleasure reading at the library?" and "How can I identify social, political, and economic themes in fiction?" Like the Business FAQ, the Penn Library FAQ can also be browsed by subject categories, which for the Penn Library FAQ have been further sectioned into two broad categories, Library Services and Information, and Research Assistance. The general Library FAQ serves a broader audience than the Business FAQ, but does not go into as much depth in any individual subject as the Business FAQ does in its specialties.

While the Penn Libraries were finishing the development of the Business FAQ system, Purdue University Libraries were in the midst of developing a similar product. Their system uses Microsoft Access as the database for storing questions and answers and Macromedia's ColdFusion Server to pull questions from the database and serve them to Web site visitors in HTML. However, the attraction of having access to five hundred business questions and the Business FAQ's shared interface made Purdue's Management and Economics Library one of the first to join Penn's Business FAQ program. Since Penn's program was primarily created and more widely used for business reference, Purdue continued to develop its own products for use in other subject areas, one for the liberal arts and the other for government documents. Like the Business FAQ, the Liberal Arts FAQ is divided into subject categories that correspond to the departments in Purdue's College of Liberal Arts. Each subject librarian is responsible for creating questions and answers specific to their discipline or specialty.

Tour 1: What Patrons See on the Penn Business FAQ

Because many users are familiar with FAQs and how a set of frequently asked questions is used, the focus is on making the FAQ's collection of searchable questions as intuitive as possible. The FAQ is accessed via a search box on Lippincott's homepage (www.library.upenn.edu/lippincott) and can be

easily searched by keyword, phrase, or by using AND or OR operators. It also has the capability to process very simple natural language questions, so that patrons entering phrases like "business ratio" or "where can I find key business ratios?" would see a page that lists resources for locating such reports in Lippincott's collection (see figure 2). Each question is thoroughly indexed so that it can be retrieved by many different keywords or phrases.

Patrons can also choose to browse the FAQ by broad category, enabling them to access information the old fashioned way: by skimming it for parts they find appealing. These general category types are:

- Business Databases
- Company and Industry
- Economics
- Finance
- General Business
- International Business
- Labor
- Lippincott Library
- Management
- Marketing and Advertising
- Publications
- Research Guides
- Statistics
- Taxation and Accounting
- Wharton School

To give a sense of what patrons find when browsing the FAQ, the first five questions that are answered in the Economics section are:

- How do I get data on consumer confidence?
- How can I find articles on econometrics?
- Where can I find economic calendars?
- How do I find listings of economics and business institutes?
- Where do I find info about energy, including prices and production?

Figure 2: Sample Question and Answer from the Business FAQ



Tour 2: What Administrators See on the Penn Business FAQ

The Business FAQ was designed to enable Penn's library to share its database model, interface, and infrastructure, allowing other libraries to create and customize their own knowledge stores based completely on Penn's prototype. The service is run from Penn servers (see figure 3). When libraries join the program, they are given access to a complete set of Lippincott's questions and answers. These questions and their associated answers can be easily customized by each participating institution.

Editing Module: Adding or Activating Questions

By default, questions initially are visible only to library staff, who are expected to consider each question individually and decide whether to make it public. Many questions may be suitable as is, and these can be made "active" with a mouse click, but much of the content will require editing by the participating library in order to reflect their holdings, their library's branding, and details particular to their institution. For instance, a question that is relevant to Penn users, such as, "Where can I find analyst reports?" would direct the user to choose between three databases that contain such reports: Thomson One Analytics, Investext Plus, and Reuters Research On Demand. Depending on the participating institution, this might require modification or deletion to make this query and its accompanying answer relevant to that institution's holdings or subscriptions. While the editing process may turn

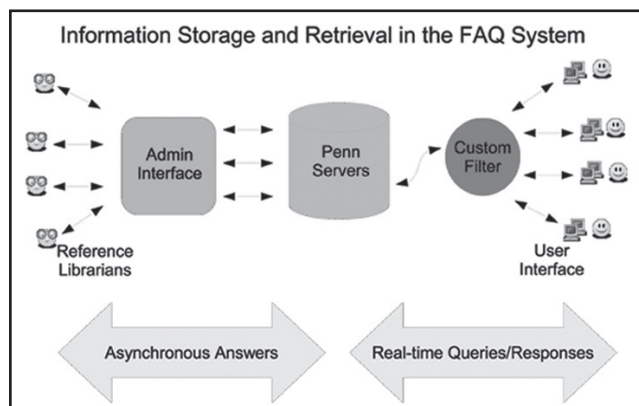
out to be lengthy, it is significantly more time-efficient than building an institutional FAQ from scratch.

Though the budgetary expenses associated with adopting the Business FAQ are fairly low, there are some ongoing maintenance requirements to keep in mind. The FAQ should be constantly enhanced by adding new keywords or phrases to existing questions and by adding new answers entered by participating schools. This feature is especially useful when a librarian from another institution with special subject knowledge adds new questions. The reports on these updates are accessible via the administrative interface (see figure 4). Whenever a new question is added or modified by any of the participating library partners, all the other partners are made aware of the change and can adopt the new question and answer for their own database. In general, the more institutions that participate, the more the work can be distributed. Even though constant housekeeping of the FAQ's contents is required, the interface is designed to acknowledge staff members' busy schedules, allowing those with administrative responsibility to view any new content in increments of seven, thirty, or one hundred days. To make this easier, new questions are denoted in red, while modified questions display the date they were modified.

Statistics Module: Tracking Usage

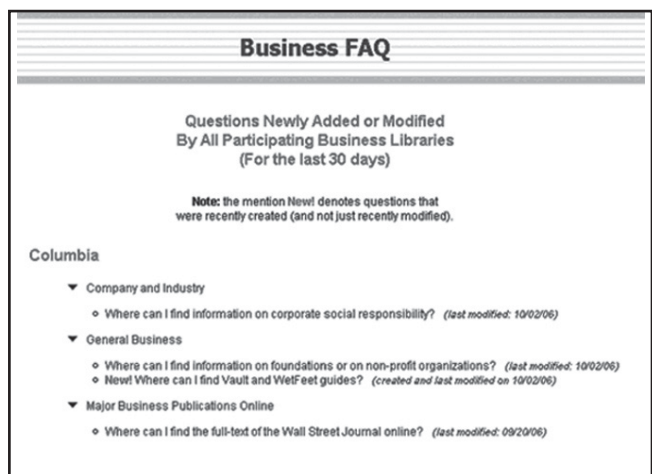
In addition to seeing questions added or adapted by other institutions, the FAQ includes a statistics module that collects, for each institution, the queries for which no response was available (figure 5) and also reports the number of hits each question generates. With this information, librarians can make the decision to add additional keywords to a particular question or to modify questions and answers completely for those entries that should have generated a response. This feature of the Business FAQ allows Penn librarians not only to get a sense of the questions not being answered, but affords

Figure 3: Information Storage and Retrieval in the FAQ System



Users submit queries via a friendly interface. The customization filter identifies their domain (e.g., upenn.edu), and pulls domain-specific responses from the Penn Servers, which it returns to the user in real-time. Reference librarians periodically monitor the database via the Administrative Interface to review queries that do not return answers as well as answers that have been added to the database by peers at cooperating institutions. The Administrative Interface makes it easy for them to submit new answers or customize peer-submitted answers to make them relevant for their domain's users.

Figure 4: Staff View of "Questions Newly Added or Modified"



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an opportunity to make things right by adjusting answers or adding relevant index terms to the records.

The Bare FAQs

The Penn version of the FAQ database contains more than five hundred unique, specific questions. Penn's Business FAQ gets an average of one thousand direct queries per month and more than four thousand hits. Lippincott staff spend an average of three hours a week maintaining the database. For more information on the FAQ, see "Just the FAQs Ma'am" by Michael Halperin, et al. in *Journal of Business and Finance Librarianship*.¹

Tour 3: What Patrons See on the Purdue FAQ

Because Purdue's Management and Economics Library joined with Penn in the Business FAQ, they decided to pattern their other FAQs after it while also continuing to develop each FAQ's individual interface. The Purdue HSSE FAQ is accessed via a search box on the Humanities, Social Science, and Education Library homepage (www.lib.purdue.edu/hsse) and can be easily browsed by subject (figure 6) or searched by keyword or phrase (figure 7). The system displays the results of subject expansions or keyword queries by listing the questions. Then each question can be opened to display the answer. Within the answers, the FAQ database names are linked directly to the Web sites and databases that answer users' questions. Each answer is indexed so it is retrievable by many different keywords or phrases.

CONCLUSION

To reach patrons, librarians need to expand beyond the physical reference desk, and even beyond virtual chat services with

a librarian to offer a service that is attractive to users who have grown to expect Google's immediacy and accessibility. The FAQ model's aim is to meet patrons where they are, giving them a customized, interactive, always-on database of questions and answers that can be searched or browsed for useful, succinct answers to their most pressing questions.

One of the best aspects of Penn's Business FAQ is that it is a shared service run by an open cooperative of business

Figure 6: Purdue HSSE FAQ Browse Mode with Questions in the Education Subject Area Opened

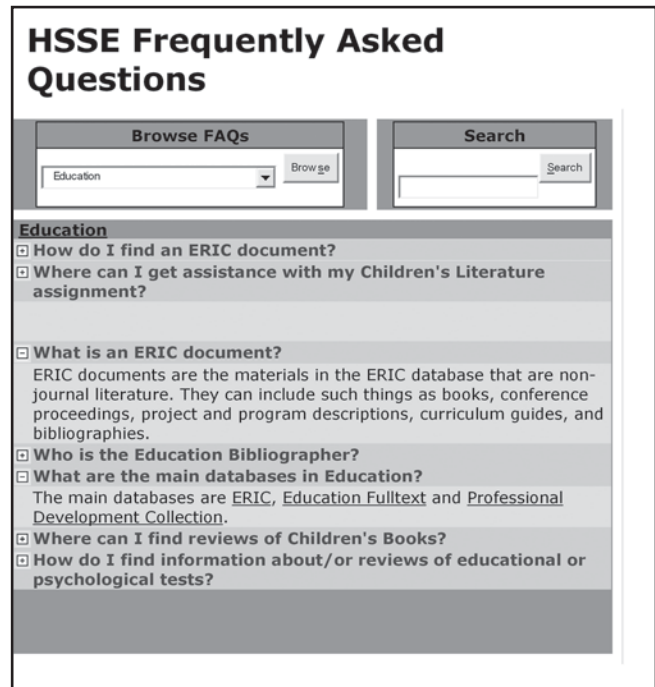


Figure 7: Purdue HSSE FAQ Search Mode with One Question and Answer Displayed

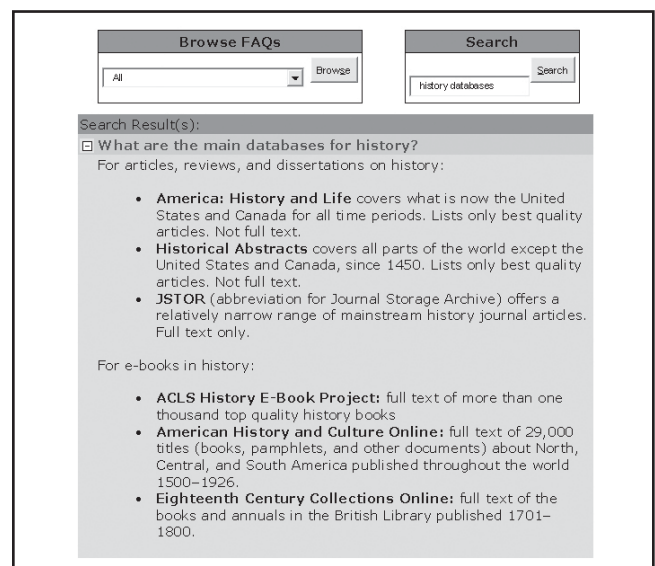


Figure 5: Queries with No Corresponding FAQ Entry

Business FAQ		
Staff Mode: Statistics		
Queries Entered by Users For the "Business FAQ" In September 06		
Query	Number of hits for the query	How many times the query occurred
Total		622
time magazine (and)	0	1
990s (and)	0	1
AMSPEC (and)	0	1
AmSurg (and)	0	1
Delaware local ordinances (and)	0	1
Hedge Fund letters (and)	0	1
M7a (and)	0	1
Margins (and)	0	2

librarians. All partners in the project understand that they and their patrons are getting first-rate service drawn from the creative minds of some of the world's leading business information specialists. Collaboration among libraries creates a shared bank of knowledge, and technology enables it to be monitored and updated according to librarians' schedules.

Libraries that want to create a similar service in subjects other than business may want to look at the Purdue example,

design their own knowledge databank, or work together to create collaborative FAQs in other specializations.

References

1. Michael Halperin et al., "Just the FAQs, Ma'am: Sharing a Business Knowledge Database," *Journal of Business and Finance Librarianship* 12, no. 1 (2006): 33–40.

APPENDIX

A Short History of FAQs

The FAQ, as a paradigm, originated in Usenet newsgroups.¹ Usenet, one of the precursors to the Web, is a distributed Internet-based discussion system. Many end-user features, communication styles, and information architectures popularized in Usenet newsgroups remain in use today. Emoticons, such as using the colon and right parentheses to indicate a smiley face, are one example, (:); the FAQ is another.

According to the FAQ about FAQs (from the Internet FAQ Archives, www.faqs.org/faqs/faqs/about-faqs, 2004):

FAQ is an acronym for Frequently Asked Questions. It is also sometimes used as the singular Frequently Asked Question. (Although when was the last time you heard only one question?)

Some have called it Frequently Answered Questions as well. This isn't necessarily correct, but it isn't necessarily wrong either. It effectively has the same meaning.

A compilation of Frequently Asked Questions (and their answers) is referred to as a FAQ list or FAQ article. Sometimes the term FAQ itself is used to refer to the article—as an example, I refer to this article as a FAQ about FAQs.

Eugene Miya is generally credited with starting the first FAQ. While working for NASA in 1982, he grew tired of seeing bad answers—"poorly thought out, inconsistent, and uninformed"—being posted in response to recurring questions. He also felt that people posting these questions had too often taken the easy way out, choosing to pose questions they could have found answers to through other media or by searching for earlier question and answer pairs.

The FAQ effectively creates a social structure that benefits both people who have questions and people who wish to see questions answered. Those who wish to see questions answered, by working together to compose a single, clear, authoritative answer, no longer have to answer the same question repeatedly; those with questions are likely to get a better answer from a FAQ than from asking a question many others have asked before them.

Reference

1. "Usenet," s.v. Wikipedia, <http://en.wikipedia.org/wiki/usenet> (accessed Oct. 3, 2006).