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Electronic Stacks: Using Web Sources in Reference Service

Di Su

York College

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**ELECTRONIC STACKS:
USING WEB SOURCES IN REFERENCE SERVICE**

DI SU

Di Su
Reference Librarian/Assistant Professor
York College Library, York College
The City University of New York
94-20 Guy R. Brewer Blvd.
Jamaica, NY 11451
(718) 262-2031
su@york.cuny.edu

Abstract

The awareness of Web sources in reference service has risen in recent years, as many reference librarians have become more Internet-minded. During the reference process, we often ask ourselves: can this question be answered by using the Web?

The use of Web sources is expanding the amount of available reference information, enhancing individual libraries' collection, and hence, providing better user service. There are many benefits in using the Web sources in reference service. There are also some drawbacks. Some useful Web sources are reviewed.

The Web, when used properly, provides reference librarians with a valuable resource option to help improve their services in an effective manner.

Introduction

Using the Internet for reference service is an important issue which has drawn some attention and research (see Additional Sources). It is also a relatively new issue which needs to be constantly discussed and developed. As Web sources have become increasingly available and better quality controlled, it is time to reassess the function of the Internet in reference service. This article discusses the usefulness of the Web sources for reference service, and to share some experience that may be practical to reference librarians.

Perhaps the most unique feature of Web source is hypertext, with which one can navigate from one document to another in a matter of a

mouse click. OK, a print book may provide cross-references, but you must make some extra efforts to get the referred books or articles. They may be located on one of the shelves, or on another floor within the library, or may be only available at another library so you have to request an interlibrary loan that may take days or even weeks to complete.

The idea of hypertext was originated by Dr. Vannevar Bush more than fifty years ago with his imaginary "Memex" system, with which one can make, store, and consult records at a rapid speed.¹ Now hypertext is a standard feature on the Web. A Web source typically contains hypertext links to other related documents or Web sites where one can find additional information. For example, a hyperlink provided by Encyclopedia Britannica Online (<http://www.eb.com>) to Webster's Dictionary gives us not only convenience and time saving, but also a meaningful combination of reference works that we may consult frequently.

Another feature of Web sources is currency. Reputable sites are updated frequently. For example, SEC filings are posted to the EDGAR Database (<http://www.sec.gov/edgarhp.htm>) 24 hours after the date of filing, while you may receive the print report in days. AT & T's Toll-Free Internet Directory (<http://att.net/dir800/>) is updated every two months; in comparison, the print version is revised twice a year. This promptness often

makes Web sources a better choice.

The Web makes physical organization and stack management easier. Having an electronic "reference stack" established, a library can save physical space and not worry about misshelving. It also reduces the need of weeding which is time-consuming and labor intensive. Of course, due to constant changes in accessibility, quality, currency, etc., Web references links need to be weeded periodically, but not as heavily (in a physical sense) as do the print sources.

Web sources can be reached from anywhere, assuming Internet access is available, 24 hours a day, seven days a week. Once your patrons have become familiar with and benefited from your Web source collection, they will revisit it from their offices or homes to do their research. It is really a library without walls.

The usefulness

One common usage of the Web is to use another library's online public access catalog (OPAC) to check its holding information, or to locate call numbers when your local OPAC system is down. For example, often times patrons look for books that we do not own at our library, but may be available at one of the local public libraries. We use public libraries'

catalogs on the Web to provide necessary information such as availability, call numbers, etc., to the patron before he visits a local library. Another example is that on one Saturday, CUNYPLUS (the OPAC of the City University of New York, Web version at: <http://libraries.cuny.edu/alib-cpl.htm>) was shut down for the upgrading process. We directed patrons to use New York University's BobCatPlus (the OPAC of NYU, Web version at: <http://www.bobcat.nyu.edu/>) on the Web, as an alternative of using the Library of Congress Subject Heading volumes, to find call numbers that were pertinent to their research. They then would go to these call number locations to browse our own collection. OPACs can also help in the interlibrary loan process.

More and more information on the Web is available to the public for free, partly because Web site owners make profits from posting advertisements for many companies. No one wants to be left out by the Internet community for it has the largest consumer market. This is something librarians should take advantage of. For example, the *Federal Register* in print costs about \$607/year. You can get it for free on the Government Printing Office's Web site (http://www.access.gpo.gov/su_docs/aces/aces140.html). Although it is limited to the current 5 years (1994-1998), the online version supports

keyword search which is especially helpful for those who are not familiar with CFR parts. Stock quotes, foreign exchange rates, noon buying rates, and other financial data are available for free on many Web sites, such as Yahoo! Finance (<http://quote.yahoo.com>), Hoovers OnLine (<http://www.hoovers.com>), and the Federal Reserve Bank of New York (<http://www.ny.frb.org>), just to name a few. But you will be charged for such information if using traditional commercial online services, e.g., Dow Jones NewsRetrieval.

You may have more than one copy of a given reference book. But even so, they are not always enough for patrons to use at the same time. Some of the standard reference works are available on the Web, e.g., *Occupational Outlook Handbook* by Bureau of Labor Statistics (<http://stats.bls.gov/ocohome.htm>). We can direct patrons to the site and show them how to use it. Thus, the Web source can serve as additional reference book copies, only in electronic form.

The weakness

The major problem is “World Wide Wait”. 56k bps modems have made Internet connectivity and downloading time faster than before. At the same time the traffic on the superhighway has been increasing at a

phenomenal rate. Perhaps we have all experienced network problems that caused inaccessibility to the Internet. It is sometimes faster to grab a familiar ready reference book from the shelf than to wait for the “Document: Done” sign at the bottom of Netscape. Besides hoping for better telecommunication solutions, you may be able to minimize the problem by using the following strategies: for fast answers, do not use a graphically enhanced Web version, choose a text only version if available. Also, Netscape Communicator allows you set up a non-graphic preference through Edit by deselecting "Automatically load images" under "Advanced" category, so that the browser will load text only throughout the search. (However, this feature is not available from Netscape Navigator). For Microsoft Internet Explorer user, you can turn off displaying pictures, sounds, and videos by using Options in View menu. If you are on the East Coast, try to use the Web as much as possible in the mornings; use it in the evenings if you are on the West Coast. This is to use different time zones to beat traffic on the Internet.

We have all experienced system crash one way or the other. Scenario A: the provider has a system failure. On February 2, 1998, the Securities and Exchange Commission's EDGAR database was unable to disseminate documents for public release because of computer problems. A similar situation had happened on March 21, 1997 when a power failure to the main

computer resulted in a major system failure. On March 16, 1998, Lexis-Nexis Web version (<http://web.lexis-nexis.com/universe>) was not accessible because of a problem at Lexis-Nexis. When something like this happens, you can do nothing about it. Scenario B: your local network is down which prevents you from logging on to the Internet in the first place. As a reference librarian, you can do almost nothing about it. Scenario C: the computer in use has its own problem. You may be able to do something about this if it is a minor problem.

Web sites do not always offer full-text documents. Some of the sites require a user account and a password for viewing full-text. They are for paying subscribers only, e.g., *The Chronicle of Higher Education* (<http://chronicle.merit.edu>). It may not be fully useful to include such a source on your Web page if your library does not subscribe to it. Some of the sites are "teaser sites" that only provide partial information or abstracts, e.g., *The Merck Manual of Medical Information* (http://www.merck.com/!!udbEH2TKgudbEi27kL/pubs/mmanual_home/).

Almost everyone can publish Web pages. While we enjoy freedom and democracy on the Web, checking reliability of the sources becomes more difficult. Traditional criteria for selecting and evaluating sources can be applied to Web material. Basic things to be considered are authority,

currency, and accuracy. In general, government sources ("gov" at the end of URL as top-level domain name) are trustworthy. You can safely bookmark, say, the Department of Labor's Web page (<http://www.dol.gov>). Information regarding opinion, discussion, or conversation (so-called gray information) are unofficial.

Building a Web-based reference collection at the reference desk

Libraries are useful because they provide access to material that is selected and organized. Librarians are valuable because they are professionals who select and organize material. As Web sources become available, we shall extend collection development into the Web.

There are various ways of building an "electronic stacks" at the reference desk, from collecting bookmarks to building Home pages or a Web site (generally speaking, a Home page is the first or "front" page on a Web site that serves as the starting point for navigation. Also known as the Welcome page).

To start with, you can collect useful Web sites or Home pages by bookmarking them at the reference desk. Arranged in different folders according to subjects, a bookmark collection provides easy access to needed information quickly. A bookmark collection can be saved on a floppy disk

and can be uploaded to public terminals in your library. Thus patrons will benefit from having these bookmarks that have been filtered and organized by the library.

A library's own Home page or Web site can be created to provide ready reference (dictionaries, encyclopedias, government statistics, news, other libraries' OPACs, etc.); frequently used subject pages (according to the institution's academic programs); and the library's public image (library's catalog, collection scope, service, location, staff information, job opportunities, etc.). Netscape composer, Microsoft Word, Microsoft FrontPage, WordPerfect, and many other software programs are excellent tools for building Home pages, and you don't even have to learn HTML!

As with traditional reference resources, Web resources should be carefully selected, evaluated, and organized. We can apply traditional print evaluation criteria to Web sources, and may add new criteria according to the unique nature of the Internet. Selection criteria should include, but not be limited to the following.

Authority: who is the creator behind the site? Who is the publisher? Usually, such information can be found on the main page of a Web site. The section may be named "About Us", or "Who We Are", or "About this Site", or the like.

Accuracy: is the information filtered by editors? Are there any fact checkers? We can benefit from reading professional journals that are devoted to Internet issues, technology, and Web source reviews.

Currency: is it updated frequently? Is the publication date clearly indicated?

Coverage: is it a full-text or teaser site?

Accessibility: is it a fee-based or fee-free site? Does it have too many graphics that require a faster computer or otherwise longer time to access and download? Does it provide options between a text only and a graphic enhanced version?

Staff training

What's new in today's job market? Virtually all job ads for reference librarian positions require familiarity with the use of the Internet. That certainly requires additional skills and knowledge.

Staff training is important as it affects librarians' daily job and user satisfaction. Training programs may vary from one library to another according to its particular setting. Training programs may be taught in various formats: formal or informal, one-to-one or classroom We are familiar with traditional reference sources by repeatedly using them.

Similarly, librarians can become acquainted with Web sources by using them regularly and, if possible, creating and maintaining assigned Web pages by subject. Although it may not be mandatory, some kind of evaluation on the use of the Internet may be included in regular job evaluations. Web issues should be discussed on a regular basis during staff meetings, so everyone is informed; sharing timely information can speed up the learning process. So stay informed, stay online.

We must constantly update our knowledge by learning new skills, not only to survive in this ever-changing information age, but also to utilize technologies to enhance our service because ultimately, a library is user-centered. In her recent article, Quint urges us "to shorten the time between the acquisition of the experience and the contemplation." And "when possible, we should speed up the sequence". She then stresses, "in the fast moving times in which we live and the fast moving field in which we labor, slow kills."²

Recommended Web sources

From my daily job as a reference librarian at a college library I have found the following Web sites to be valuable. All of them are fee-free sites. This is by no means an exhaustive list, nor is it up-to-date by the time it is

published.

General Reference

WWWebster Dictionary

<http://www.m-w.com/dictionary.htm>

As a part of Merriam-Webster Online - the language center on the Web, WWWebster Dictionary offers interactive features through hyperlinks. You may visit the Guide to Pronunciation to learn symbol explanations, or click on Thesaurus to find related words. Keywords within an entry's definition page are hyperlinked to their own entries. The site offers a text only version as an option.

Roget's Internet Thesaurus of English Words and Phrases

<http://www.thesaurus.com>

Published by Lexico LLC. Peter Roget's "Preface to the First Edition" (dated April 29, 1852) is presented on the page called "Preferences and Info About This Thesaurus" (you won't see this title until clicking on the question mark on the main page that will lead you to the spot).

There are three methods to search: (1) enter a word or a phrase in a

dialogue box; (2) browse through an alphabetical listing of all of the thesaurus entries; or (3) browse the outline of the thesaurus by category. The outline presents the six broad categories into which Mr. Roget classified the entire vocabulary of the English language: abstract relations, space, matter, intellect, volition, and affection.

In addition, the site provides links to other language reference resources on the Internet. Some interesting ones are: On-Line Resources for Writers; Emily Postnews Answers Your Questions on Netiquette; Hints on writing style for Usenet; The World-Wide-Web Virtual Library: Languages; The World-Wide-Web Virtual Library: Linguistics; Hypertext Webster Interface. This site offers viewing options of frame or non-frame interface.

Barnes and Noble

<http://www.barnesandnoble.com>

“The world’s largest bookseller online” has launched its own Web site to compete with the “Earth’s Biggest Bookstore” Amazon.com (<http://www.amazon.com>) on the Net.

With millions of titles, this site can be an alternative to *Books in Print*. You can search by author, title, subject, keyword, or ISBN.

You can narrow your search by specifying a format (hardcover or

paperback, e.g.), price range or content type (non-fiction, fiction, or children's, recent publications (books published in the last six months), list of 150,000 to 200,000 top sellers, and books scheduled for upcoming release. If you would like the "Reader's Catalog" to recommend titles for you in your particular area of interest, select the option to narrow your search results to the list of 40,000 Reader's Catalog recommended titles.

The site also provides information on Books in the News, Award Winners, Bargain Books, and Bestseller List, that are valuable for collection development.

The site offers discounts apply to more than 400,000 titles daily. It also offers thousands of hard-to-find textbook, academic, and reference titles, which are sold at publishers' list prices.

Occupations and Careers

Peterson's Education & Career Center

<http://www.petersons.com>

Famous for its excellent services, Peterson's is the leading provider of information on U.S.-accredited educational institutions and special programs found around the world.

Peterson's Web site covers elementary and secondary schools, colleges and universities, professional degree programs, study abroad, executive management programs, distance learning, financial aid, internships, summer programs, and career information. It also provides features such as online application for selected institutions.

To find a college or a university quickly in the Education Center, you can use the alphabetical or geographic pathways. You can also use various searches to find colleges that have the majors and degrees you are interested. Simple Search allows you combine search terms automatically, spaces are treated as "AND" connectors. Advanced Search accepts Boolean operators (AND, OR, and NOT) and the proximity operator (NEAR). All sites provide basic information and many give visitors extensive descriptive material on specific undergraduate and graduate programs as well. Hyperlinks to the target institutions' own Home pages are not provided, although it would be helpful.

Standard Occupational Classification (SOC) Codes

<http://weber.u.washington.edu/~dev/soc.html>

A complete listing of Standard Occupational Classification (SOC) Codes has been compiled and presented on the University of Washington's

Office of Development Web Page. You may find this page too long to scroll down. The use of hypertext would have helped on designing this Web-based document. An added value of this page is that it provides a hyperlink to the Standard Industrial Classification (SIC) Codes, which is also compiled by the University of Washington's Office of Development.

Standard Industrial Classification (SIC) Code

<http://weber.u.washington.edu/~dev/sic.html>

This one has the same presentation as the above-mentioned SOC tables. However, if one clicks on "HOME" and arrives on the University of Washington's Office of Development's Main Web Page, he will find another version of SIC table under the section "Standard Industrial Classification (SIC) Code Scheme" which provides hyperlinks to a searchable SIC table (direct access: <http://www.osha.gov/cgi-bin/sic/sicsr5>) created by U.S. Department of Labor, Occupational Safety and Health Administration (OSHA). The scheme also provides hyperlinks to a U.S. government proposal about replacing the (outdated) SIC table with the North American Industry Classification System (NAICS), and the Census Bureau's directory of documents about the proposed North American Industry Classification System (NAICS).

For this particular subject, i.e., SIC, one may prefer OSHA's version which provides the ability to search the hypertext alphabetic index of the 1987 manual by keywords; access detailed information for a specified SIC, Division, or Major Group; and browse through the manual structure.

Occupational Outlook Handbook

<http://stats.bls.gov/ocohome.htm>

Compiled by the Bureau of Labor Statistics (BLS), an agency within the U.S. Department of Labor, the *Occupational Outlook Handbook* is the government's premier career reference book on occupations and tomorrow's job market. The most current edition is 1998-99.

For more than 50 years, this work has proven useful to career counselors, students, and job seekers. Completely revised every 2 years, the Handbook is a comprehensive, up-to-date, and reliable source of career information. Useful for looking up information on particular occupations, or just browsing through possible careers, the Handbook profiles 250 occupations that in 1996 accounted for over 114 million jobs (6 out of every 7 jobs in the United States). For each career, it describes work activities and environment, earnings, number of jobs and their location, and types of education, training, and personal qualifications needed to have the best

prospects. Bureau of Labor Statistics projections of employment to the year 2006 are used to assess what kind of job opportunities future entrants to each occupation should encounter.

There are three ways to find information about specific occupations:

(1) Perform a Keyword Search on the Handbook

At its simplest, a query may be just a word or a phrase. You may also use Boolean operators (AND, OR, and NOT) and the proximity operator (NEAR) to specify additional search information to get more complete results. The wildcard character (*) may be used to truncate words. Free-text queries may be specified without regard to query syntax.

(2) Use the Index to the Handbook

A hypertext index provides quick access to sections.

(3) Select from an Occupational Cluster--"Outlook for Specific Occupations" which is a categorized index that clusters occupations into the following categories: Executive, Administrative, and Managerial Occupations; Professional and Technical Occupations; Marketing and Sales Occupations; Administrative Support Occupations, Including Clerical; Service Occupations; Mechanics, Installers, and Repairers; Construction Trades Occupations; Production Occupations; Transportation and Material Moving Occupations; Handlers, Equipment Cleaners, Helpers, and Laborers;

and Job Opportunities in the Armed Forces.

Navigating within the Handbook is fast largely due to its non-graphical nature. Other information on the site includes how to order the Handbook, reprints, and related publications. It also provides hyperlinks to the Employment Projections Home Page, Publications & Research Papers, and BLS Home Page.

Statistics

Statistical Abstract of the United States

<http://www.census.gov/statab/www/>

This site claims to be "Uncle Sam's Reference Shelf".

As the "National Data Book" it contains a collection of official statistics on social and economic conditions in the United States. The Abstract is also your guide to sources of other data from the U. S. Census Bureau, other Federal agencies, and private organizations.

The 1997 edition is now available on the site in Adobe Acrobat PDF format. You can download Adobe Acrobat PDF software at Adobe's Web site for free (<http://www.adobe.com/prodindex/acrobat/main.html>). There are new tables covering topics such as hate crimes, pet ownership, and consumer

finance.

If you scroll the page half way down, you will find a table list of selected features from the *Statistical Abstract*, 1997 edition and *USA Counties 1996*. These tables can be viewed without using Adobe Acrobat.

The selected features include:

USA Statistics in Brief. This is a supplement to the Statistical Abstract and presents national summary data and state population estimates. Tables include Population; Communications; Transportation; Employment; State Population estimates; Housing; Income; Vital Statistics; Social Welfare; Prices; Health; Government; Business; Education; Agriculture; Finance; Law Enforcement; Energy; and Foreign Commerce.

Frequently Requested Tables. These tables have been selected based on requests and information collected through various user questionnaires. This list is subject to change based on demand and additional tables will be added. Tables include: Frequently requested population tables; National Health Expenditures; Educational Attainment--Race and Ethnicity; Crimes and Crime Rates--Types; Child Abuse and Neglect Cases--Victim Characteristics; Federal Budget--Summary; Department of Defense Manpower; Civilian Employment in Occupations with the Largest Job Growth; Civilian Employment in Fastest Growing & Declining Occupations;

Gross State Product; Gross Domestic Product; Personal Income, & Expenditures--Per Capita; Personal Income Per Capita, by State; Consumer Price Indexes--Major Groups; Consumer Price Indexes--Selected Items; Money Market Interest Rates and Mortgage Rates; Bond Yields; Stock Prices and Yields; Establishments; Employees, and Payroll; Bankruptcy Cases--States; Bankruptcy Cases--Type and Chapter; Energy Supply and Disposition; Motor Vehicle Registrations--States; New Privately-Owned Housing Units Started; Characteristics of New Privately-Owned One-Family Houses; Retail Sales, by Kind of Business; U.S. International Trade in Goods and Services; U.S. Exports, Imports, and Merchandise Trade Balance; and Population and Land Area--Countries.

State Rankings. Tables include Resident Population; Population in Metropolitan Areas; Population Under 18 Years Old; Population 65 Years Old and Over; Population Projections; Infant Mortality Rate; Births to Teenage Mothers; Medical Doctors Per 100,000 Population; Public School Enrollment Rate; Public School Teachers' Average Salaries; Full-Time College Enrollment; Violent Crime Rate; Federal and State Prisoners Per 10,000 Population; Public Aid Recipients; Persons Below Poverty Level; Employment/Population Ratio; Nonfarm Employment--Percent Manufacturing; Average Annual Pay; Personal Income Per Person; Median

Household Money Income; Energy Consumption Per Person; Motor Vehicle Deaths Per 100 Million Vehicle-Miles; Homeownership Rates; and Retail Sales Per Household.

State and County Profiles. Available in Map version and Text only version, the profiles are currently based on the 1996 edition of the Statistical Abstract and will be updated in the future with information from the 1997 edition of the Abstract.

Laws and Regulations

Federal Register Online

http://www.access.gpo.gov/su_docs/aces/aces140.html

The Federal Register Online, sponsored by the Office of the Federal Register, National Archives and Records Administration, is published on the United States Government Printing Office's Web site. It is the official daily publication for Rules, Proposed Rules, and Notices of Federal Agencies and Organizations, as well as Executive Orders and other Presidential Documents. The searchable database contains 1995, 1996, 1997 and 1998 Federal Register (Volumes 60, 61, 62 and 63) in full-text. The 1994 Federal Register (Volume 59) database is also available; however, it contains no

fields or section identifiers.

Instructions are provided for searching the database. You may limit search scope by selecting one or more volumes, or sections (Contents and Preliminary Pages, Presidential Documents, Final Rules and Regulations, Sunshine Act Meetings, Proposed Rules, Reader Aids, Notices, and Corrections).

Documents may be searched by issue dates (a range of dates or a specific date in the format mm/dd/yy), CFR parts, or page numbers. Words can be truncated using an asterisk (*). Keyword searching is available, but you must follow some restrictions. For example, phrases must be in quotation marks (" "). The operators ADJ (adjacent), AND, OR and NOT can be used, but must be in capital letters.

Documents may be retrieved in ASCII "TEXT" format (full text, graphics omitted), Adobe Portable Document Format, "PDF" (full text with graphics), and "SUMMARY" format (abbreviated text).

The U.S. Securities and Exchange Commission (SEC)

<http://www.sec.gov>

To quote from SEC online: "The SEC is an independent, nonpartisan, quasijudicial regulatory agency with responsibility for administering the

federal securities laws. The purpose of these laws is to protect investors in securities markets that operate fairly and to ensure that investors have access to disclosure of all material information concerning publicly traded securities. The Commission also regulates firms engaged in the purchase or sale of securities, people who provide investment advice, and investment companies."³

The site offers a text only version as an option for those who have slow machines or need speedy retrieval. Among many useful sections are SEC Digest & Statements, Current SEC Rulemaking, and the EDGAR (the Electronic Data Gathering, Analysis, and Retrieval system) Database of Corporate Information. The EDGAR Database (direct access: <http://www.sec.gov/edgarhp.htm>) appears to be the most valuable and practical database which allows you to retrieve publicly available filings submitted to the Securities and Exchange Commission from January 1994 to the present for free. SEC filings are posted to the EDGAR Database 24 hours after the date of filing. It supports keyword search on companies. Form Pick is an excellent option in the EDGAR database (direct access: <http://www.sec.gov/edaux/formlynx.htm>). You can quickly retrieve the target information by choosing a report type, e.g., 10Q.

Downloading and printing a SEC report that contains financial tables

used to be a headache. Tables were not formatted and figures were not lined up. Now you can use conversion software, thanks to the creator Dave James, to get formatted reports. The program, EDGARCVT, converts Web documents to WordPerfect format and is available for free downloading at SEC's site (direct access: <http://www.sec.gov/edaux/util.htm>).

The same SEC documents are also available on a commercial site, EDGAR-ONLINE (<http://www.edgar-online.com>) which provides formatted reports and does not show HTML tags, but you will have to register for a subscription (\$9.95 per month).

Conclusion

"The traditional concept of a library is being redefined, from a place to access paper records or books, to one which also houses the most advanced mediums, including CD-ROM, the Internet, virtual libraries, and remote access to a wide range of resources."⁴

While the Web is only one source of information and traditional sources will not and should not disappear, the Web is becoming a necessary source for reference service with its unique features and helps librarians serve patrons better. When it is used properly, the Web sources can enhance reference service in an effective way.

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