

## What is OpenURL?

An OpenURL is a URL that contains metadata to enable users to find content appropriate for them. This is called “context-sensitive” in the parlance of the industry. Primarily used in libraries, OpenURL utilizes metadata to help users find appropriate articles and information. This usually means citations for which their home institution has a subscription. OpenURL was originated by Herbert Van de Sompel, with the Library Automation Team at the University of Ghent, and Oren Beit-Arie of Ex Libris.<sup>1</sup> It was further developed by NISO (National Information Standards Organization as International ANSI (American National Standards Institute) standard Z39.88. The OpenURL has two parts: a base url that usually resolves to a link server or link resolver, owned by an individual institution. The second part of the URL is the “descriptor”. The descriptor is much longer and carries bibliographic metadata (sometimes in Dublin Core syntax) to glean the proper information from an outside source, usually a full-text database.<sup>2</sup>

So what does “context-sensitive” actually mean? In today’s standard usage it works like this: the user navigates to the library resources for her/his institution. Arriving at the appropriate database, the user signs on using her/his user name and school ID number. When s/he searches the database the link server creates an OpenURL on the fly, utilizing the search criteria and the

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<sup>1</sup> *On the Road to the OpenURL*. Library Technology Reports. [www.techsource.ala.org](http://www.techsource.ala.org). January-February 2006. p. 8

<sup>2</sup> Dahl, Mark. OpenURL.

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content availability based on the institutions subscriptions. Usually the content with full-text access will be displayed differently than the content for which the institution doesn't have access. Link servers display content differently according to company specifications and set-up preferences by the institution. For example, Google Scholar handles the issue of links and availability this way: "...Google Scholar provides OpenURL links to the link resolver whether the full text is available or not; only the size and the placement of the link vary. For those citations in which the electronic full text is available in a library's subscriptions, the link will appear in a larger font above the citation. When the full text is not available, the link appears in a smaller font below the citation."<sup>3</sup> When I first started reading on this subject I thought: "They should only show citations for which they have full-text access because it's annoying to see a citation or abstract for which the full-text is not accessible. I quickly realized that thorough research should include citations/abstracts for all the articles pertaining to a search. In one article it said: "In librarianship, there should be no dead ends, because at the very least, interlibrary loan exists to get the users the content they need."<sup>4</sup>

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<sup>3</sup> Grogg, Jill E. and Christine Ferguson L. OpenURL Linking with Google Scholar. Searcher; Oct2005, vol. 13 issue 9, p39-46. p. 2

<sup>4</sup> *ibid.* p. 12.

## How Does OpenURL Work?

An OpenURL looks like a very long url. It contains a base url and a descriptor.

The descriptor is a set of defined variables that show the URL source (the database where the user can get the full-text of the article—EBSCOhost, OCLC FirstSearch), metadata about the article (journal name, ISSN, the volume and issue numbers, author’s name and title, etc.)<sup>5</sup> OpenURL 1.0, the most recent iteration of the standards, is more flexible than it’s predecessor, OpenURL 0.1. OpenURL 1.0 can “contain metadata pointing to more than just scholarly articles, including patents, mathematical and chemical formulas, or even non-scholarly items such as real-estate listings or news stories.”<sup>6</sup> It is important to remember that OpenURL is not a metadata format, like Dublin Core, EAD, it is a means of transporting metadata.<sup>7</sup>

The link server is the piece most closely controlled by the individual library. Some commonly used links servers are SFX from Ex Libris (<http://www.ExLibrisgroup.com/sfx.htm>), and 1Cate (<http://www.openly.com/1cate/>) from Openly Informatics (partnered with OCLC). The link server finds the “most appropriate” instance of the article.

For example, if the link server finds 15 instances of a particular article, they will utilize the context of the user to discern that the user’s institution only has

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<sup>5</sup> Dahl, Mark. *OpenURL*. Computers in Libraries. 10417915, Feb2004, Vol. 24, Issue 2. p. 1.

<sup>6</sup> *The Development of Context-Sensitive Linking*. Library Technology Reports. [www.techsource.ala.org](http://www.techsource.ala.org). p. 15

<sup>7</sup> *ibid* p. 15

a subscription to JStore or ProQuest, and therefore, will only show the instances of the article from those databases. According to the Ex Libris website: “For an information service to be OpenURL-aware, the service must be able to distinguish between users who have access to a link server, such as SFX, and those who don't. ... examples of such methods include the following:

1. Using information stored in a cookie (the CookiePusher mechanism)
2. Using information contained in a digital certificate, such as the one proposed by the DLF digital certificates prototype project
3. Identifying a user's IP address
4. Obtaining user attributes via the Shibboleth framework<sup>8</sup>

Mount Holyoke uses the SFX links server to provide access to articles in subscription databases. If a user does a search for articles on “early humans” and “house pets”, s/he will get a list of hits/links to articles, some of these articles will display with an  button. The MH links button provides direct links from a database citation to the full text of the article (if available) and records of other Mount Holyoke resources such print journals and books. This is a nice feature because it is very easy for the user to scan the page for the ‘MH Links’ icon to see which citations have links to full-text. Unfortunately sometimes the icon pulls up a link to the journal and not the full text of the article. According to the FAQ, “MH Links service will get you as close to the

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<sup>8</sup> Ex Libris. OpenURL Overview. [http://www.Ex Librisgroup.com/sfx\\_openurl.htm](http://www.Ex Librisgroup.com/sfx_openurl.htm). 5-4-06

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full-text as it can, given the structure and quality of the data being passed by the database vendors.”<sup>9</sup> However, according to the FAQ the MH Links icon means that the full text of the information package is available, but the user may have to dig to find it.

## How Does Google Scholar Work?

Google Scholar works slightly differently than the service that Ex Libris SFX provides to Mount Holyoke. Google Scholar, primarily, (but not always), controls its own links server and requests that the library provide a list of holdings so that their server can discern what holdings and subscriptions a participating library has. However, Google Scholar does work with some external link servers. They also request a range of IP addresses from the participating institutions so the server knows when a user logs on from a particular IP address, that user is affiliated with Simmons College, or The University of Massachusetts.<sup>10</sup>

In November 2004 Ex Libris entered into discussions with Google for Google to provide OpenURL linking via the SFX link server. The initial user testing of this partnering was unsuccessful. The quality of URLs being sent from Google Scholar was problematic. “Initially the only data transmitted in the OpenURLs

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<sup>9</sup> <http://www.mtholyoke.edu/lits/library/ref/SFXFAQ.shtml>

<sup>10</sup> About Google Scholar. <http://scholar.google.com/intl/en/scholar/about.html>. And Grogg, Jill E. and Christine L. Ferguson. OpenURL Linking with Google SCHOLAR. Searcher; Oct2005, vol. 13 Issue 9, p

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were digital object identifiers (DOIs) and PubMed IDs, which generated a large number of requests that could not be resolved to full-text. According to Oren Beit-Arie, chief strategy officer at Ex Libris, the lower success rate for OpenURLs from Google Scholar has resulted partly from the fact that Google does not have as much control over the quality of its metadata as do the vendors of subscription services.”<sup>11</sup> Despite the difficulties, Beit-Arie hails the Googlization of OpenURL as bringing it out of the library and into the public eye.

The University of Massachusetts began using OpenURL via Google Scholar during Summer 2005. Electronic resources and systems librarian Linda Matson said: “The main factor in the decision to participate was that it will be used, whether we like it or not... We want users not to have to pay for resources, like copies of articles, for which they should have free access.”<sup>12</sup> I think what she means is that students will use Google as their main research tool, so they might as well be able to access resources that UMASS (and the students) have already paid for.

This is an interesting point made by both Matson and Beit-Arie. People know Google, they trust Google and they don't want some librarian telling them that Google's metadata isn't as good as EBSCOHost. Because they don't know what metadata is, and don't care about EBSCOHost. Everyone knows Google. So it

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<sup>11</sup> Grogg, Jill E. and Christine L. Ferguson. OpenURL Linking with Google SCHOLAR. Searcher; Oct2005, vol. 13 Issue 9, p 2

<sup>12</sup> *ibid.* p. 3.

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would seem, for certain populations, utilizing Google Scholar is the right choice. For others not so much. CalTech acquisitions librarian, John McDonald, feels that there are issues with what Google Scholar indexes and the completeness of their OpenURLs. McDonald also feels that Google “only wants to highlight full-text services while libraries want to provide users with all the extended services (ILL, catalog, linking into other databases and information resources, etc.)”<sup>13</sup> Many institutions also balk at Google scholars request for library holdings. To many librarians this seems like too much information to bestow on the behemoth search engine.

There are a few other well-known companies that deliver link server products. I’ve already mentioned SFX and Openly Informatics. There is Ovid’s SilverLinker:

[file:///localhost/\(http://www.ovid.com/site/catalog:DataBase:148.jsp%3Ftop=2&mid=3&bottom=7&subsection=10\)](file:///localhost/(http://www.ovid.com/site/catalog:DataBase:148.jsp%3Ftop=2&mid=3&bottom=7&subsection=10)), and an open source software out of University of Alberta and the University of Windsor called GSLocal (see: <http://sourceforge.net/projects/glocal/>).

## The Importance of OpenURL:

It is difficult to discern the impact of OpenURL as it is currently used in libraries. There is no simple explanation for how it works, and why the

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<sup>13</sup> Grogg, Jill E. and Christine L. Ferguson. OpenURL Linking with Google SCHOLAR. Searcher; Oct2005, vol. 13 Issue 9, p 3

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academic community needs it. But as more and more people outside the academic community become more and more familiar with research and research techniques, they will want more specific feedback to their search queries. With one glance into the wealth of LexisNexus the general population will discover some really amazing fee-based content on the internet. Content not available by typing a few words into Google.

I can think of two other uses for the OpenURL standards that I did not see in the literature, although by no means did I do an exhaustive search. I think that user context could be used in a broader sense. For example, if the user is child age 6-10 doing research at their public library, typing in their library card number could alert the link resolver to access only appropriate databases such as: Searchasaurus (<http://0-search.epnet.com.library.simmons.edu/login.asp?profile=sasO>) from EBSCOHost or Gale Group's Kid's Edition K-12, or Facts For Learning. Another useful feature of OpenURL is as a collector of metadata for digital objects. If OpenURL can transport metadata, it might be adept at joining the metadata with the artifact and providing that digital object to a storage warehouse. If uses such as these occur to me than I wonder what the Google geniuses will do with it!

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#### Works Cited

- Apps, Ann, MacIntyre, Ross. Using the OpenURL Framework to Locate Bibliographic Resources. *Ariadne (Online)*, (January, 2004)
- Dahl, Mark. "BUILDING AN OpenURL Resolver in Your Own Workshop. (Cover Story)." Computers in Libraries 24.2 (2004): 6-56.
- Dahl, Mark. "OpenURL." Computers in Libraries 24.2 (2004): 26-.
- Grogg, Jill E.; Ferguson, Christine L. "OpenURL Linking with Google Scholar." Searcher (October, 2005), vol. 13 issue 9, p39-46.
- Grogg, Jill E.; Ferguson Christine L. "October: OpenURL Link Resolvers: the Helping You Buy series, Comparing Competing Library Technology Products." Computers in Libraries (October, 2004): p. 17-24.
- Menke, Susan M. Library of Congress Tries Out Web Services. Post-Newsweek Business Information, Inc. (February 2004).
- Van de Sompel, Herbert, Beit-Arie, Oren. "Open Linking in the Scholarly Information Environment Using the OpenURL Framework." D-Lib Magazine. (March 2001) Vol. 7, number 3.
- "The Development of Context-Sensitive Linking." Library Technology Reports 42.1 (2006): 14-23. *Searcher* v. 13 no. 9 (October 2005) p. 39-46, 2005
- "Gale Adopts SFX OpenURL Standard." Information Today 18.11 (2001): 33.
- "Innovative Uses of the OpenURL." Library Technology Reports 42.1 (2006): 35-7.
- "Library of Congress Completes Historical Archiving Project, Implements OpenURL." Information Today 21.4 (2004): 36-7.
- "NISO Issues Report on Statistics Forum, Forms Committee to Develop OpenURL Standard." Information Today 18.5 (2001): 62.
- "On the Road to the OpenURL." Library Technology Reports 42.1 (2006): 8-13.
- "Openly Informatics Adds OpenURL to Google Scholar." Information Today 22.2 (2005): 31-.
- "Thomson Gale Introduces OpenURL Linking." Online 28.6 (2004): 6-.