Open URL

By Richard W. Boss

Almost all public libraries subscribe to one or more citation databases directly with the producer, with an aggregator that offers access to databases from several producers, or through a regional or statewide program sponsored by a consortium or state library agency. While some citation databases include the full text of the target resources, most do not. Even those that include full-text do not do so for all citations. As a result, a library must meet the need of its staff and patrons by creating and maintaining linkages from the citations to its own holdings and to external full-text databases to which it has access. As doing so almost always requires linking to multiple sources, it is important that the linkages be "open," rather than proprietary. That means that a citation from a journal database can be formatted in a standard way that can be processed by the local library system to identify local holdings or by a link resolver (also known as a link server) that will send it to a full-text database for retrieval of the appropriate full text. This is achieved through OpenURL, a type of Uniform Resource Locator (URL).

The Uniform Resource Locator (URL), which dates back to 1994, was designed to describe a location and means for obtaining an electronic resource by describing its primary network location per a protocol. Every URL consists of some of the following: the scheme name, followed by a colon, then a host name or IP address, a port number, the path of the resource to be retrieved or the program to be run, and then a query string or anchor for where the resource should start to be displayed.

OpenURL is a type of URL intended to enable searchers to more easily find a copy of a resource that they would be allowed to access. Though OpenURL can be used with any kind of resource, it is predominantly used to assist library staff and patrons in connecting with the copy of the most appropriate context of the request. In other words, the one to which the library subscribes, not just any copy.

While OpenURL became a de facto standard in 2000, the formal standard was not completed by Committee AX of the National Information Standards Organization (NISO) until 2004. When published, it became known as NISO Z39.88. For a detailed illustration of the structure of an Open URL see www.wikipedia.org/wiki/OpenURL. A free PDF of the standard is available for downloading at the NISO's web site at www.niso.org.

Under the standard, a citation database that is OpenURL-compliant prepares a structured and formatted OpenURL string that includes the internet address of the link

resolver at the library's site or at a service bureau. The string also includes data elements that allow the link resolver to identify the source of the original publication. If the target resource is a journal article, the standard provides for the inclusion of the journal title, ISSN, volume, issue, date, start page, article title, and author. The more complete the data in the OpenURL string, the greater the likelihood of successful link resolution. The string for other types of resources is similar.

The OpenURL is needed because links that do not conform to OpenURL do not take into account the identity of the user; they take users to a target full-text database regardless of whether the user is in a library that has a subscription for that title in that specific full-text database. Even if a library has a subscription to that specific full-text database, it may not be able to provide access to all categories of users. For example, some licenses restrict use to resident borrowers, with guest borrowers denied access.

This context sensitive aspect of OpenURL requires that a library include complete and accurate information about its staff and patrons, its holdings (including call numbers or shelving locations), its full-text database subscriptions, and access restrictions in the link resolver's knowledge base.

The inclusion of complete holdings information is particularly important because missing holdings information may result in a patron being directed to more expensive and time consuming resources.

Once the OpenURL string has been parsed, the link resolver seeks to match information in the OpenURL string to the titles about which it knows. Each vendor that maintains a link resolver has its own matching algorithm, but all look first to match on the ISSN if the resource is a journal article. For that reason, it is important to include the latest ISSN in the database for all locally held titles and titles available through full-text databases. The approach for other resources such as books, patents, and online library catalogs is similar.

The link resolver should offer information delivery choices to the user. The choices may not be limited to local holdings and titles available through full-text databases. Many libraries include options for interlibrary loan and document delivery.

While it is possible for a library to design and operate its own link resolver, most libraries subscribe to the link resolver offered by a vendor of an integrated library system; vendor of software, including software as a service; or an aggregator. It is not necessary that the link resolver come from the same vendor as the library uses for its integrated library system. For example, scores of libraries have purchased ExLibris' SFX link resolver, the first commercial product to be introduced, and are using with other vendors' integrated library systems. The link resolvers of aggregators may be used to access full-text in other aggregators' databases.

The link resolver may be housed on site or at a service bureau. While the capital cost of the former is greater, the ongoing cost may be less. However, there is more to the ongoing cost of a link resolver than the maintenance of hardware and software. There usually is a subscription that keeps the URLs up to date.

While a library may be reluctant to spend thousands, or even tens-of-thousands of dollars. a year on linking products and services, it should evaluate the cost in light of the total investment
it has made in its collection and the full-text database services to which it subscribes. In most cases, the investment is justified.

As of late 2010, there were many options available to libraries, including Bowker's Ulrichs Resource Linker, EBSCO's LinkSource, Fretwell-Downing's OL2, Infor's Vlink, Innovative Interfaces' WebBridge, OCLC's WorldCat Link Manager, Ovid's LinkSolver, Serials Solutions' 360 Link, SirsiDynix's Resolver, Swets' SwetsWise Linker, and TDNet's TOUR.

In addition to comparing costs among options, a library should look carefully at the features of each option, including the degree to which customization is possible, especially customization of screens. The best way to do this is to compile a list of features by looking at several products, marking the features that are desired by the library, and then comparing each of several products against the list of desired features.

While link resolvers represent yet one more cost for libraries, the benefit is the increase in use of electronic resources to which a library provides access. The benefit to library staff and patrons is that they obtain access to more resources with less frustration.

Link Resolvers are imperfect. Among the problems are inaccurate holdings data, absence of target resources in the target databases, or incorrectly generated OpenURLs from source databases. Beginning in 2010, NISO's Improving Open URL Through Analytics (IOTA) was working on a two-year project to analyze libraries' source URLs so that vendors can improve the metadata they are sending to link resolvers.

While a great deal of information about OpenURL is available on the Web, much of it is outdated. The best current information can be obtained by looking at the Web sites of several vendors of link resolvers and that of NISO (www.niso.org).

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