A comparison of database administration offerings reveals service gaps and unheralded benefits

By Peter Webster

When librarians license databases, they must configure features for maximum patron utility. Vendors have created administrative tools to assist in this process, but more uniform and common administrative features would significantly change the way database products are used and managed. A standardized set of factors is needed, including validation methods, linking tools, and title list services.

To some extent, link resolvers, federated search tools, proxy servers, title list management services, and customized methods of collecting statistics have been developed to supplement the limited interoperability and standardization of existing databases.

Librarians have let database vendors and ILS systems off the hook by adopting these separate integration products rather than requiring better built-in features. Many librarians will continue to rely on the native features of each database because they do not have the resources to develop custom solutions or purchase additional applications.

E-journal databases need to go beyond Counting Online Usage of Networked Electronic Resources (COUNTER) compliance to provide standardized, easily automated, and aggregated usage statistics using SUSHI and other emerging standards (see “Bit by Bit,” Winter netConnect, LJ 1/06). A wider selection of common methods of user validation is still needed, as is broad deployment of new validation methods like Shibboleth and NCIP. Timely, accurate, and easy-to-access serials title list management tools need to become a fixture of all journal database products.

**Database integration**

Librarians need to manage a growing number of databases collectively. Because database products are becoming increasingly integrated, we focus on administrative features that assist interoperability, particularly linking aspects, title list features for OpenURL linking, and federated searching. Since database usage is largely happening outside library buildings, remote authentication services are included.

E-journal databases, abstract and index products, and full-text journals from publishers and aggregators offer a wide range of web-accessible administrative features. Each vendor’s unique administrative service allows setting search parameters, collecting usage statistics, and changing colors or adding a local library logo.

We reviewed ABC-CLIO, Cambridge Scientific Illumina, EBSCOhost, Elsevier Science Direct, Gale InfoTrac, OCLC FirstSearch, ProQuest, Springer Link, and WilsonWeb.

**Statistical reporting**

COUNTER is an international standard for database statistical reporting. All but two of the reviewed databases offer some level of COUNTER-compliant statistics. Compliance is a good first step, but librarians managing large numbers of databases need a number of additions.

Six of the reviewed databases provide automated emailing of statistical reports, which offers major time savings from running individual monthly reports for each database.

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Getting statistical reports into a common format that can be merged into Excel is the obvious choice for this task. Most databases provide output that can be used in Excel with a little effort, but, surprisingly, multiple database reports cannot be directly merged into Excel because each report varies slightly. This makes merging reports quite time-consuming. EBSCO stands out from the pack by enabling librarians to customize reports, rearrange fields, and standardize report layout.

As the number of library-licensed databases grows, more detailed statistics become important. Usage statistics by individual journal title are a COUNTER requirement and are available from all but ABC-CLIO and OCLC FirstSearch. More detailed reports, such as statistics by IP (Internet protocol) address, can show where a user accesses databases and indicate which workstations are most popular. Only ABC-CLIO, EBSCO, and ProQuest offer IP-based user statistics. Four others say they can provide IP usage reports by special request, but directly available services are much more convenient.

Many databases offer personalization features that allow users to save searches, get search alerts, or otherwise customize use. Seven of the reviewed databases offer some form of user customization. However, only three have any usage statistics for user-customized services, and none provide complete statistics for these features. Vendors are certainly collecting this information for their own reference, and it’s important that librarians demand access to this valuable user profiling.

Since linking among databases has become popular, publishers want to link in one database to full text in other databases. The NISO Circulation Interchange Protocol (NCIP) is a standardized protocol for exchanging information and validating users into an integrated library system (ILS). To date, only OCLC offers NCIP validation. Shibboleth is a new method for institutions and vendors to check user credentials and share validation information about authorized users. Both Shibboleth and NCIP show great promise, although they are not yet widely used. EBSCO, Elsevier, and ProQuest offer Shibboleth authentication.

Proxy servers like EZproxy, Virtual Private Networking (VPN), portals, and other methods of user validation are also becoming common. These new methods are making individual database validation less important. However, individual database validation methods are still essential for most libraries. They often work in conjunction with institutional security methods because of the need to customize access to each library.

Content linking
OpenURL linking is becoming an important part of a library’s service layer. Linking references in one database to full text in other databases is now required. Another essential e-journal database feature is the ability to link into the library catalog for holdings. This can be performed directly or through the link resolver. All reviewed databases offer some form of linking to a library catalog, though some older ILS products do not support it.

Elsevier has no built-in library catalog link and Referral page validation is increasingly useful. This permits database access as long as the request comes from a particular trusted web page, like a secured library database page. It may be restricted to particular PCs or may require a password for access. This method is offered by seven of the reviewed databases, but only by special request from four.

Barcode pattern matching is a way of authenticating patrons by checking a user’s library barcode number. The user is allowed access to the database if the barcode fits within a range of numbers, or contains particular combinations of numbers. This system is not as secure as checking the barcode against the live catalog database, but it is an easy and very popular alternative for remote access, particularly in public libraries. Barcode pattern matching is only offered by four of the reviewed vendors.

Emerging authentication methods
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To Make Database Administration Better

1. Provide statistics in a standard format like SUSHI so I can merge multiple reports.
2. Give me IP range and time-of-day statistics so I can figure out if resources are being used by the targeted users.
3. Let me have reports on demand instead of by request.
4. Give me access to statistics for personalized services, like saved searches.
5. Let me see the statistics on linking, so I can see who's going from place to place.
6. It's all about single sign on. Give me referral linking so patrons don't have to keep typing in access codes, and let me give privileged users user name and password access.
7. Let me only show users links that go somewhere.
8. The goal is console database login. Make it easier for me to set up my link resolver. It's too hard to find OpenURL information now.
9. Use CrossRef and automate your serials database so I don't have to customize holdings for each vendor.
10. Make your title lists available as a web service.

only offers linking to the library catalog through a separate third-party link resolver. All the reviewed databases provide customized features for connection to a separate link resolver like SFX from Ex Libris or Serials Solutions' Article Linker. Many have built-in services for particular resolvers. H.W. Wilson has gone a step further and includes linking features from the SFX Link Resolver with its databases.

Title list filtering

A surprising four of the reviewed databases do not offer link filtering based on journal holdings lists or the option to customize a title holdings list. Many vendors maintain title lists for common full-text databases. Database administrators can simply select the full-text products they own or license. EBSCO and ProQuest maintain title lists for hundreds of full-text databases, as well as offering features for creating and managing customized lists.

A critical database linking feature lets you display search results based on whether a library holds a particular journal. For example, a "link to full text" button should appear in database results only if full text is available from the library's holdings or licensed e-content. No link to full text button should appear if full text for the journal is not available from the library. To do this, tools for managing serials holdings lists are an important bonus of database products. CrossRef is an organization that maintains a central database of digital object identifier (DOI) links for journal articles from over 1500 publishers. Hopefully, the use of this centralized resource will increasingly relieve database vendors and libraries of the need to manage individual title lists. Some vendors, including ProQuest and EBSCO, already access the CrossRef database.

The popularity of link resolvers means that many at larger libraries are less concerned with the linking capabilities of individual databases. However, features like title list filtering are still important to the functioning of separate link resolvers, and many at smaller libraries will continue to rely on the linking features of each database.

Journals A–Z

Libraries need easy access to database title information to maintain journal holdings lists for a variety of purposes. Catalogers often keep separate lists for link resolvers, separate A–Z services, and individual database products. Serials holding information must also be kept up-to-date in library catalogs.

Since librarians manage many different database products, it is necessary to access all database administration information from one place. All of the reviewed databases provide publicly available journal title lists, but five of the nine don't provide access to this information from within the administrative service area. Title lists and title changes, as well as other services like usage statistics, are often found at separate web locations, sometimes requiring separate passwords. It is also common to merge lists of titles from different databases, but several vendors do not provide title lists in Excel. Lists of persistent URLs are provided by many vendors, including ABC-CLIO, CSA, and Gale.

Several others provide syntax or instructions for constructing persistent URLs, instead of as a list that can be cut and pasted or merged. It is increasingly vital that all e-journal vendors provide accurate title lists, prompt title changes, and easy-to-access title information, including persistent URLs for online journals.

Future solutions

E-journal databases are rapidly becoming more standardized and integrated in many ways. Wide acceptance of the COUNTER statistics standard has been an important step. That standard is being further developed, and SUSHI promises to standardize further the collection of reports and automatically transmit statistics. Use of the CrossRef OpenURL database is widespread and growing. The ONIX for Serials project is working on developing methods for transferring electronic serials holding information. Electronic resources management (ERM) systems such as Ex Libris's Verde are being developed to manage all database information centrally. New common search standards for federated database searching are also developing rapidly. We will soon be able to manage many databases from one location, to automate the export of multiple database statistical reports using XML.

Despite these developments, current database administrative systems are still largely proprietary and unique to a fault. They were developed in isolation, with little thought to interaction with other systems. When databases offer common features or present common information, they do so in different ways. Library staff must be trained to use each administrative system individually. In many cases, librarians have developed workarounds to overcome the shortcomings of the vendors' services.

A standard set of features, validation methods, linking features, and title list services, from all databases, are still needed and would significantly change the way database products can be used and managed.