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The ADVISOR Reviews... METASEARCH SECTION: ENCompass for Resource Access 3.0

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METASEARCH SECTION: ENCompass for Resource Access 3.0

URL<http://www.endinfosys.com>**Reviewer**

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Scores**Composite: 3.250** ★★☆☆

Content: 3.00 ★★☆☆ Many of the major general purpose content databases can be searched with the current connectors; more are being added in enhance more specialized needs

Searchability: 4.00 ★★★★★ Works well as a resource discovery system; industry standards for search queries would help a lot

Price: 1.00 ★ No specific pricing information available

Contract: 5.00 ★★★★★ Flexibility of local design options for the interface; flexibility of new release installation; modularization

Pricing Options

ENCompass for Resource Access is priced based on the FTE of the institution. When purchased in conjunction with other ENCompass modules (Digital Collections or LinkFinderPlus), additional discounts may apply. Specific rates and price ranges were not available from Endeavor for this review--contact the company for additional information.

Product Description

ENCompass for Resource Access (ERA) is Endeavor's meta- or federated search product that can be purchased and implemented either as an independent module or as part of the full ENCompass system, which includes ERA, ENCompass for Digital Collections (EDC), and LinkFinderPlus (LFP).

Using federated search tools such as ERA allows the library to finally begin providing easier access to the wide variety of resources available to users today--locally and remotely, in databases and on the Web, in formats ranging from books to journals to Web sites to multimedia. While the concept of federated searching has been around awhile, it has primarily been limited to a particular search protocol (e.g., federated Z39.50 searching with products

such as OCLC's WebZ; or HTTP-protocol metasearch engines on the Web, such as Inference Find, MetaCrawler, and Savvy Search). One of the strengths of a federated search tool such as ERA is the ability to simultaneously search not only across multiple resources, but to simultaneously use multiple search protocols, in this case Z39.50, HTTP, and XML gateways.

Like other federated search tools, ERA has advantages and disadvantages. One of the biggest advantages is based on the concept of "resource discovery"--the ability to quickly gain an overview of what a wide variety of related (and sometimes unrelated) resources have to offer on a particular topic before concentrating on selected databases. Combined with the savings in time and typing as the metasearch engine repeats the query in each external search engine for you, we are finally getting closer to finding an answer to Google for library-selected resources.

This, however, brings us to an inherent difficulty in federated searching--the fact that queries are being run against a variety of search engines rather than a single engine optimally tuned to a specific database of content. Between the lack of standardization in query formats among the various search engines and the currently limited ability of metasearch engines to translate a complex query into the command language of each constituent database, queries must be entered using "lowest common denominator" strategies and terminology. Those of us who grew up using more traditional, Boolean command search services such as DIALOG, BRS, LEXIS/NEXIS, etc., are accustomed to being able to build complex search queries that return very precise results--sometimes at the expense of the serendipity offered by broader recall. Much of our user population however, particularly students, has grown up with Google and the Web and has a greater tolerance for ambiguity in searching--and little tolerance for trying to remember the name of that database the librarian told them about last week!

The challenge for librarians using these new federated search tools is to move beyond the initial reaction that they are a replacement for individual database-specific search strategies to a point that they use them as a new tool for resource discovery that can:

- help users (and librarians) quickly gain an overview of relevant resources to concentrate further efforts on for a given topic;
- help users (and librarians) discover topically relevant resources that might not normally be considered in a standard search approach, and
- help librarians more easily introduce and integrate new resources into the search process for users.

Once the initial federated search is completed, the user can more efficiently focus further searching with the potentially more powerful (or at least more optimized) search tools offered natively for a given resource.

"Out-of-the-box" the ERA 3.0 user interface is designed around the concept of making it easy to select and search individual or groups of resources. Individual resources can be grouped into collections. Collections can be organized by subject (e.g., "Arts," "Science and Technology," "News and Current Events"), by content type (citations only, full text, images), etc., at the library's discretion, with resources assignable to, and searchable in, more than one collection. During a search, users can select one or more collections, individual databases (including the library's OPAC), or a combination of these. Various search types are available including Keyword, Keyword Phrase, Author Keyword, Title Keyword, and Subject Keyword. Both simple search and advanced search interfaces are available. Advanced search offers limited Boolean options. The interface is based on XML and XSL and can be extensively customized locally.

The search process in ERA is deceptively simple--select the resource(s) to be searched, select a search type, enter the search term(s), and press Search. The system then connects to and searches the selected resources and displays a summary of results by collection and resource. The system is designed to return a maximum number of hits from a given resource rather than the entire results set (for resource discovery purposes) with max hits ranging from 50-100 for internet resources like Google and Yahoo (HTTP connectors), to 100 for typical library databases (Z39.50 and XML gateway connectors), to 1,000 for local Voyager OPACs. Hits can then be viewed by database or as a consolidated list, sorted by title. Individual records can be

selected and viewed from this results display. Using the individual record display, users can see citation, abstract, and full-text information (depending on the information passed to ERA by the remote resource), and/or link out to the originating database to view information, including full text when available. Links are also provided to the originating database if the user decides to continue searching that resource directly rather than through ERA. An example of this search process can be viewed on the Endeavor Web site .

Underlying a portion of the ERA federated search functionality is technology from MuseGlobal, Inc. MuseGlobal provides the basic database connection and search parameters for remote resources requiring HTTP connectivity to Endeavor, which incorporates this "connector" information into the ERA product for the resource. The collaborative nature of this arrangement highlights the underlying complexity of the deceptively simple process of federated searching--many entities and many systems must cooperate and be in sync to make the process work. For example, for resources needing HTTP connectors, it is often a four-way partnership that must be working well to keep resources available and working correctly in ERA from the user's point of view:

- MuseGlobal--must stay current with changing database vendor systems and the various authentication schemes used to access a specific resource; these can change without notice from the vendors and can be different for a given library or consortial arrangement;
- Endeavor--must quickly, and correctly, incorporate the MuseGlobal connector information into ERA and efficiently distribute updates to customers in ways that do not overwrite local customization;
- local sites--must regularly test connectors to ensure they are working correctly locally, report problems, update search collections based on availability of resources, install updates, and make local authentication changes; and
- resource vendors--must balance business considerations in providing access and assistance to federated search system vendors and customers, with the desire to focus on traffic coming in directly to their sites.

Z39.50 resource connectors are usually less problematic since the library can set up and maintain these connectors locally. The most problematic issue is usually correctly parsing and mapping record elements, especially for nonstandard MARC-like records.

XML gateways are not a common protocol yet. This is, however, a potentially much more robust protocol than HTTP (and possibly Z39.50) since it avoids user interface issues and relies on system-to-system communication. Endeavor is actively involved in working with resource vendors to increase the number of XML gateways used in ERA.

User authentication to ERA 3.0 can be handled in several ways:

- IP authentication based on the user's IP address
- Authentication against a campus LDAP server (via a system exit/API)
- Authentication against the Voyager patron file (for Endeavor Voyager sites)

Authentication out to individual databases is then handled via the authentication information defined in the resource connector and is often brokered by a proxy service such as EZProxy.

ERA system administration is done via a Windows client allowing authorized staff to

- define resources in ERA,
- add local connection / authentication information,
- determine record element display mappings,

- assign resources to collections, and
- add resource / collection labels and descriptions.

Basic ERA usage data is captured for use and analysis with Microsoft Access. Available data elements are Collection, Database, User Class, IP Range, and Search Type.

ERA can also be extended in its functionality or integrated into other services through the use of several supplied APIs.

Critical Evaluation

It is important to keep in mind that ERA is a relatively young product (the ERA module was first introduced in early 2002), and federated searching is still a complex environment with few standards and less than universal acceptance from the resource vendor community. In spite of that, the reaction we have typically had from our local ERA users is "awesome!"

As the library community's answer to the deceptive ease of searching Google, ERA 3.0 offers a great starting point--it is simple to use, many of the most popular resources geared toward undergraduates (as well as many more specialized resources) can be searched simultaneously, and it provides a painless way for the library to get users to both familiar as well as new or unfamiliar resources in a particular subject area. As long as ERA's primary purpose--resource discovery--is kept in mind, it is a great tool to give all levels of users (not just undergraduates) a quick overview of a wide variety of resources. It can be especially useful for those just beginning to investigate a new topic, or those wanting to test the boundaries of an old one--particularly given the interdisciplinary nature of research and publishing today.

Customization and Flexibility

ERA is designed with a fairly modular architecture. The underlying database is a run-time version of Oracle, and the user interface is based on XML data structures and XSL "style sheets." Tomcat, Apache, and Java provide middleware functionality. By using this architectural approach, ERA has a major advantage over most other currently available federated search systems--the interface is more loosely coupled with the underlying system. So far, this has resulted in the ability to mix a new system release with a previous version of the interface with relatively minor problems. This translates into increased flexibility for the customer site to make and, more importantly, retain local changes across new system releases with minimal downtime. This approach can allow a site to install a new release more quickly and gradually change the interface to take advantage of new functionality. For those sites wishing even greater control of the system release and upgrade process, a Test Server version of the system is available for purchase.

User interface flexibility--look and feel, navigation, branding, etc.--is an important consideration with any online system. ERA is designed to allow a great deal of customization and flexibility in the user interface through its use of XML for the underlying data structures and XSL for interface presentation. This can be both a distinct advantage of ERA and a potential drawback, depending on the level of local technical support available. On the one hand, the system can be used out-of-the-box with little interface redesign required beyond local branding. At the other extreme, sites can (and have) completely redesigned the interface to suit local needs. Perhaps the major determining factors are the level of XML and XSL programming support available at the local site--a nontrivial consideration for many libraries--and the level of comfort with often less-than-perfect data parsing and record displays.

In addition to flexible interface design, the ERA architecture also offers a certain amount of extensibility and integration options through the use of system APIs (Application Programming Interfaces). Examples of extensions or integrations developed so far include a simple search function that can be integrated with local portal systems such as uPortal, improved navigation and viewing of multi-page documents, integration with image viewing and manipulation functionality, and improved integration with course-management systems.

Simple versus Advanced Searching

ERA offers both simple and advanced search pages out of the box. The simple search page approaches the simplicity of a Google-like search--type in a search term, select your collection, and hit the search button. Advanced searching gives more options such as additional search types and basic Boolean capability. Even with the advanced search option, the lack of query elegance is potentially a drawback for ERA--depending on your expectations. Intricate nested Boolean searches are not really possible at this point--nor should they realistically be expected given the variety of databases being searched and the lack of industry standards for search query formation. This is something librarians can hope to see improved in the future. In the meantime, most users seem to find the current functionality quite adequate. This compromise enables the user to move easily from a broad resource discovery search in ERA to the native interfaces of the individual databases once he has narrowed down the field of possibilities.

System Administration

Basic system administration is accomplished via the provided Windows client. This allows local setup and minor customization of resource connectors. Collections are then built using standard drag-and-drop techniques to associate resources with one or more collection groups. A good basic understanding of database field mapping and local database access details is critical. In addition, a basic understanding of Unix is necessary to manage the local system implementation.

Support

Either local or Endeavor staff can install the product. During initial implementation, Endeavor assigns a project manager to each site to assist in training and to answer implementation questions such as connector setup, interface customization, and authentication issues. Once in production, questions and problem reports are handled via the company's support group, which can be reached by e-mail and phone. Additional support information, such as individual connector status and updates, is maintained on a passworded customer-accessible Web site. New releases and connector updates, so far, are done by Endeavor support staff in cooperation with local staff. Finally, a growing community of ERA customers is willing to share experiences and local solutions through a customer e-mail list and/or individual contact.

While Endeavor has recently gone through a rocky period with ERA customers regarding the update cycle on resource connectors, the company (in cooperation with partner MuseGlobal) has made a renewed and significant commitment to the issue of connector functionality and timely updates. While this is a necessary and welcome development, it is also critical to keep in mind that this is not uniquely an Endeavor problem--it is an issue for the library and vendor community in general. In recognition of the industry-wide nature of the issues, NISO has formed a group to explore federated searching (or metasearching) issues and to identify potential solutions.

Coming Attractions

ERA-related enhancements planned for ENCompass release 3.5 (Fall 2003) include:

- integration with the WebCT and Blackboard learning management systems;
- an improved initial display that better distinguishes "searchable" as opposed to "clickable" resources, and the ability to display more information about each resource;
- an enhanced Results Summary display that includes the total number of hits from a database (if provided) as well as the library-determined maximum hits; and a flag indicating the database includes full text;
- an expanded Results Set display including additional descriptive metadata, a native interface link, an OpenURL, a thumbnail for image objects, and a mime type for

ENCompass repository items;

- title sorting that will ignore initial articles;
- optional record deduplication for the results set (results across repositories can be deduped based on a hierarchy of up to three fields and a preferred database, set by the library);
- better tools for managing virtual repository membership in collections;
- additional XML gateways for more stable searching of virtual repositories;
- context sensitive fulltext links--this eliminates the need to view the LinkFinderPlus display for each item to determine whether full text is available;
- a new display option for EAD records that will allow easier navigation based on the hierarchy of the finding aid;
- the ability to display multiple digital objects associated with a single descriptive metadata record in an ENCompass repository;
- support for Red Hat x86-based Linux in addition to Solaris; and
- incorporation of the FAST search engine, although this will have little immediate impact on ERA (the primary effect will be for EDC).

Contract Provisions

No contract provision information was available on ERA for this review. Customers must have local contracts for all licensed resources they wish to search using ERA.

Authentication

There are two levels of authentication to be considered with ERA--access to the search system and access to resources. Search system access can be handled by several methods including IP/network authentication, verification against a local Voyager patron file, or verification against a local campus LDAP service. Access to the individual resources is defined within the resource connector and is dependent on the vendor's requirements. Resource access can be further complicated, particularly in the case of IP authentication, for off-campus users. In these cases, a proxy service, such as EZProxy, is required.

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