Managing Administrative Metadata

The Tri-College Consortium's Electronic Resources Tracking System (ERTS)

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This article describes the Electronic Resources Tracking System (ERTS), an administrative metadata management tool created by the Tri-College Consortium (Bryn Mawr, Haverford, and Swarthmore colleges). ERTS stores and provides access to data elements associated with electronic resources, such as license restrictions, authentication means, technical contacts, and statistics availability. ERTS was developed using the FileMaker Pro database application and is mounted on our intranet. The database is utilized by technical and public services staffs at all three colleges.

A growing need exists for metadata management of administrative issues related to electronic resources (e-resources). Some of these issues include license restrictions, authentication means, technical contacts, and statistics availability. Integrated library systems (ILS) do not easily accommodate such metadata, and paper files maintained by serials librarians have proven inadequate both in accessibility and organization. Making e-resource metadata quickly available to interlibrary loan and reference staffs is facilitated by an online gateway of the ERTS model.

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In the Beginning

Discussions about the state of Tri-College e-resources were held in 2001. The focus of these discussions, which were sponsored by a Mellon Foundation grant, was ensuring consistent access to e-journals throughout the consortium. This original charge was broadened later that year and resulted in development of the ERTS system. The authors comprise the founding members of the ERTS Team.

We held a number of brainstorming sessions to identify the results each library hoped to achieve with ERTS. Particularly due to our consortium status, numerous discussions were necessary so as not to overlook any one library's specific needs. Some of the goals for ERTS included:

- immediate access to license information for all e-resources purchased by the Tri-College Consortium libraries
- various statistical reports not easily available, if at all, through our integrated library system
- notification services that alert staff when e-resources are about to expire

We began identifying data elements based on these needs. The suggested fields, and the information we expected to place within them, fit into four categories:

- Licensors: entities from whom we license e-resources
- Items: individual e-resource titles
- Purchases: acquisitions data concerning e-resources
- Vendors: entities from whom we purchase e-resources

After consulting established element sets, particularly those maintained by the University of Washington (Jewell 2001) and Johns Hopkins University (HERMES 2001), it was comforting to see that our direction was quite similar. Appendix 1 lists the elements used in ERTS.

Scope

ERTS exists in large part because of limitations inherent within integrated library systems. That said, the ERTS Team was wary of duplicating information already held in our local catalog. Thus we sought to restrict ERTS's scope to those data either unavailable, or not easily retrievable, through our ILS. Since the predominant mission of ERTS is to track license information, few freely available electronic resources are entered. (Unlike similar e-resource systems, ERTS has no patron-accessible component and does not deliver e-resources to the Web.) Only in cases where a certain aspect of a freely available e-resource requires tracking, such as how the consortium has decided to catalog it, is it entered in ERTS. In cases of volatile aggregators, only a collection-level record is maintained. Resources we have decided to exclude from ERTS generally fall into these categories:

- extending less than a year's guarantee of access
- delivering incomplete holdings (e.g., only random articles are provided)
- not providing ready title-level access

License Information

As in many institutions, electronic resources are heavily used in our libraries. As a result, serials and acquisitions personnel field numerous questions from public services staff regarding license restrictions. The paper files we maintained before ERTS were not an adequate medium for promulgating license-related information. Ellen Finnie Duranceau's efforts with license tracking at MIT were influential at pointing the way toward a networked file for staff use (Duranceau 2000). Apart from the license terms related to legal responsibilities (e.g., merchantability, indemnification, governing laws), ERTS stores elements that directly address what library services we can provide and what our patrons can do with a given resource. Some of these data include:

- ILL allowability: We have buttons for yes, no, n/a, and unknown. There is also a free text box to allow for further details (e.g., ILL allowed only via print). Our ILL staffs need to know this information, and occasionally reference librarians are asked about such restrictions.
- Number of simultaneous users: Because certain resources carry this restriction, this element helps public services staff troubleshoot the cause of a user not being allowed access. Documenting simultaneous user limits in ERTS provides a check that may help public services staff before assuming a more involved access problem is the culprit.
- Print restrictions: Some resources limit the number of pages printed per session, and others even prohibit printing. This element prevents the expenditure of valuable time trying to diagnose an apparent printing problem.
- Reserve restrictions: Staff responsible for electronic reserves need to know if such mounting is restricted in any way. An example of such a restriction is having a strict time frame for the duration of the e-reserve link. As with print restrictions, the licensor may obligate us to inform users of such restrictions or other license terms.
- SDI availability: This element indicates the availability of a service allowing patrons to register for e-mail notification when new content becomes available. Often, such content is in the form of journal issues or tables of contents.
- Archival guarantee: As we exchange print subscriptions for electronic equivalents, access to this information has become a great concern, especially since it is often hard to tease out of veiled licensing language.
- Negotiation contact: This element stores the name of the licensor's negotiation representative. This information is useful when we wish to alter the language in our license.
- General comments: This catch-all field is used to capture license data not covered in the fields above, such as a note concerning license revision dates.

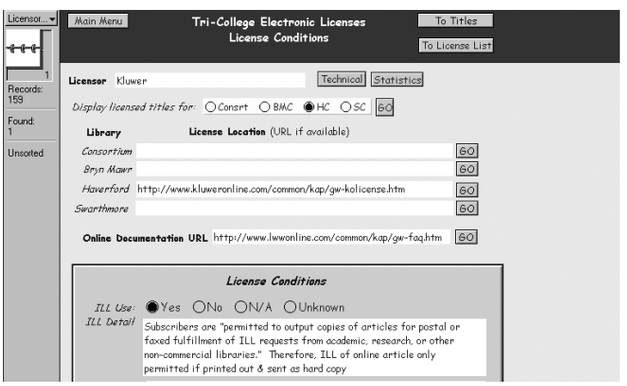

Figure 1: Technical Services View of a Licensor Record

Cataloging Information

Cataloging electronic resources in the Tri-College setting poses complications beyond the natural challenges inherent with this ever-changing media. When the Tri-Colleges first purchased electronic resources, a commitment was made to provide individual bibliographic records in our local catalog for each title. During this time, many journal publishers provided online access to their content, often free with the print subscriptions. As aggregators and large publisher collections became available, the challenge to provide title and subject access grew into an even more formidable task, as described expertly by Calhoun and Kara (Calhoun and Kara 2000). In order to continue providing individual title access in this environment, the Tri-Colleges employed several methods of cataloging, including a locally derived batch method, along with the more standard copy cataloging via cooperative resources like OCLC. Further adding to this quandary, the consortium libraries share a catalog. Although the libraries purchase many online resources collectively, there are numerous e-resources unique to a single library. Maintaining consistent cataloging standards across three separate technical services units is a challenge. ERTS supports sharing of these standards by centralizing cataloging information for the Tri-Colleges.

Initially, the cataloging elements in ERTS were linked to the licensor database. This architecture posed three problems, however:

- The licensor name (e.g., Elsevier Science) is generally not used by cataloging and reference staff to identify an electronic resource (e.g., ScienceDirect).
- Catalog librarians describe information about individual and collection titles that is not always consistent across multiple resources offered by the same licensor. For instance, a licensor may place title lists and holdings information for one of its collections on the Web, but not for another. This may affect the way the resources are cataloged. Appending these cataloging data to title records, rather than licensor records, gives us the flexibility necessary to record differences among collections.
- Several freely available collections for which the Tri-Colleges maintain cataloging procedures do not warrant a licensor record.

The cataloging database consists of approximately sixteen fields that are divided into four sections on the cataloging information page: Title; Tripod (the Tri-College Consortium's integrated library system) Searching Information; Technical Cataloging Information; and Publisher-Related Information. An explanation of each section follows:

Title

Cataloging uses this section, consisting of one element "Title," to identify the individual journal, collection-level, or aggregator title. The Tri-Colleges use the MARC 130 (Uniform Title) tag for local collocation and retrieval purposes within Tripod. The title field in ERTS replicates the locally derived 130 field. The intention is to facilitate ease of searching for public services staff. If they require more information about an electronic resource, they can then search the title in ERTS.

Tripod Title Searching Information (for Public Services)

This section, designed for use by public services staff, consists of two elements that identify the search keys necessary for retrieval of all titles in a collection or aggregation. The first field contains a URL that invokes an OPAC search in Tripod. The second element contains the Tripod search key and search term. Such a field might look like this: author=Project Muse.

Technical Cataloging Information

This section centralizes local decisions for Tri-College cataloging staff. It consists of three elements. The first field notes, whether individual titles within a collection, aggregation, or database, are analyzed. The second field indicates what method is used to catalog analyzed titles and where the file used for the locally batch-created records resides. The third field records any MARC fields that are unique to each collection, aggregate, or database. For instance, a cataloger might decide to use a series entry to help collocate related electronic resources. When this is the case, the 4XX field (and 8XX field, if necessary) would be recorded in this field. Also, if a 7XX field is recorded for a person or corporate body, it would be accordingly noted in this area.

Publisher-Related Information

This section incorporates URL and note fields. The URL field directs catalogers to a title list, usually located on the licensor's Web site, that is used in our batch load procedures. A brief note about the update pattern and frequency of these titles lists is also located here. The final element in this section is a note about whom to contact at the vendor for service updates.

Overall, the cataloging database is a modest component of ERTS. Yet it provides the Tri-College's cataloging community an invaluable tool. ERTS circumvents the need to record cataloging decisions on paper files or "in our heads," making for a stronger, more fluid approach to cataloging electronic materials throughout the consortium.

Purchase Information

Although much purchase information is available in our local catalog, we felt it would be useful to be able to view a title's cost over a five-year period, as well as to easily distinguish any one-time fees. Additionally, we wanted to have the ability to generate reports that would tell us how much we were spending on different categories of electronic titles. Each purchase event is captured in ERTS by entering the following data:

- Library: this is the purchasing library or in some cases may be the consortium as a whole.
- Licensor: selected from a drop-down list of licensors; this is usually the publisher/creator of the title.
- Vendor: also selected from a drop-down list; this is from whom we purchase the title. For cases in which one of the libraries acts as purchasing agent for the other two, that library would be recorded as the vendor.
- Purchase type: we have a need to distinguish among titles that are paid as electronic only, titles that carry an added cost over the cost of the print subscription, and titles that offer free online access as a consequence of a print subscription.
- One-time charges: we wanted to record this information separately so that it could be distinguished from annual costs. Price, paid date, expiration date, and ILS order number are also entered.

Generally, much discussion surrounds the initial decision to purchase a particular resource. The decision to renew a resource, however, is often made with less thought and in a very short time frame. It is most often the case that the need to make the renewal decision is prompted by a renewal form or invoice from a vendor and is sometimes received after the previous subscription has expired. We often do not take the time to ask ourselves important questions such as: How often was this resource used? Has the licensor provided good service in the case of technical problems? Can we justify the cost? Instead, we often rely on the gut feeling of our bibliographers. While their sense of the usefulness of the resource may be valid, we want to be able to provide more data and more time for them to make the renewal decision. Therefore, we have added an e-mail-alerting component to ERTS which uses the expiration date in the purchase record and notifies selected staff sixty days prior to the expiration of a title. This is a strategy we learned from the HERMES system implemented at Johns Hopkins University (HERMES 2001). We believe this gives us sufficient time to analyze usage statistics, cost, and service issues (which are available in ERTS) so that we can make informed renewal decisions. A 'renew' button in the purchase record moves the previous year's purchase data to a new column, retaining the ILS order number and purchase type. ERTS uses

Figure 2: Example of Data as Recorded in the "Technical Cataloging Information" Section

Figure 3: Example of a Purchase Record in ERTS

the price entered for the new year to calculate the price change from the previous to the current year.

A variety of reports can be generated from the purchase data in ERTS. For example, we can create reports totaling electronic acquisitions by purchase type (publisher collection, aggregator collection, electronic only, etc.) for the fiscal year or for any selected time period, giving us the title, the most recent paid date, and amount of each electronic resource, sorted by type of resource, then by title. A report on the number of records by purchase type and an annual expenditure comparison report can also be generated. Other report types can be created as needed.

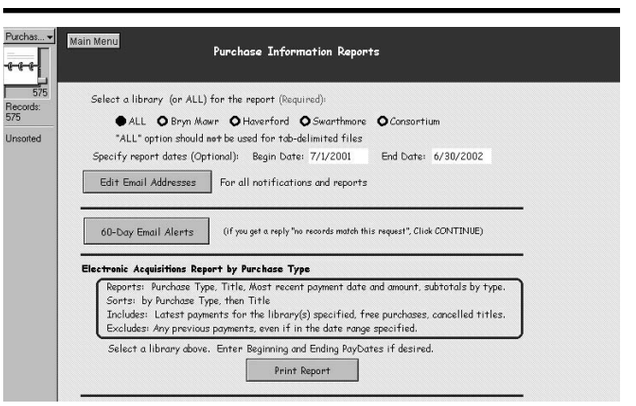

Figure 4. ERTS Report Module

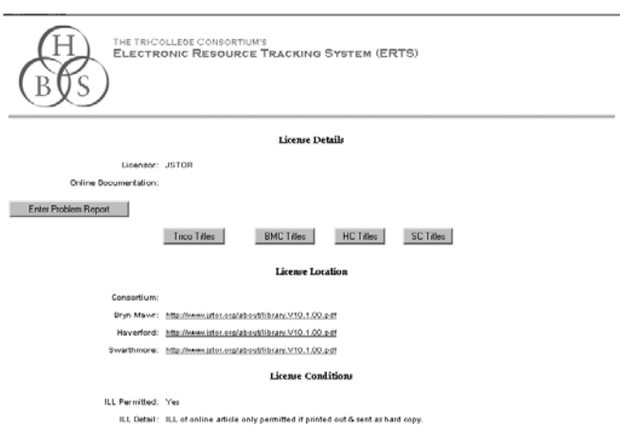

Figure 5. Public Servies View of a Licensor Record in ERTS

Technical Specifications

ERTS runs on FileMaker Pro, currently version 5.5 desktop (not server) software at Haverford's Magill Library. ERTS was developed on a Mac, but currently runs on Windows. Staff use Macintosh and Windows computers to access the database, which performs well on both platforms. Read-only access to ERTS is restricted to the three college campuses by IP address; editing privileges are restricted by passwords.

The staff functions of inputting, editing, and reporting are available in all three campus libraries through FileMaker's sharing system. Search functions for public services staff are available through a Web interface using the FileMaker CDML tags. Through the Web, users on the three campuses can search by licensor name or title and view the license restrictions that apply. Staff can also enter comments about an e-resource's system performance or access difficulties, which can then be made available to them at renewal time.

ERTS consists of six interrelated files or "tables."

- **Licensors** (entities from whom we license resources)—One record is entered for each licensor and used by all three libraries.
- **Items** (individual resource titles)—One record is entered for each title and used by all three libraries.
- **Purchases** (acquisitions data about the resources)—Each library maintains a separate purchase record.
- **Vendors** (entities from whom we purchase resources)—One record is entered for each vendor and used by all three libraries.
- **Service comments** (incident reports)
- **Administration** (constant data needed by several files)

More information about these files is available on the ERTS Web site, www.haverford.edu/library/erts/.

Conclusion

ERTS's well-defined mission does not prohibit its evolution. Plans are in place to create a workflow model that would track the various phases an e-resource goes through from selection to cataloging. In the same vein, we would like to interface ERTS with a locally developed trials database. Such a marriage would bridge the gap between trial use of an electronic resource and the decision to purchase it and would help the consortium better monitor the life span of its growing e-resource collection.

Although ERTS has satisfied its mission of making available administrative metadata to all staff within the Tri-College Consortium, it is likely the system will eventually outgrow its relatively simple infrastructure. Most e-resource systems are built using more robust database applications and are utilized not only to track, but to provide access to e-resources. ERTS could be redesigned to do this within its

current framework, but such efforts would be limited technically by FileMaker Pro's functionality and would overlap with other work currently underway in the consortium. Moreover, once ILS vendors begin to market ERTS-like systems, it may be logical to import the data into such a system so as to merge the administrative piece with the delivery mechanism.

Additional Resources

A number of other e-resource projects similar to ERTS are underway. Adam Chandler (Cornell University) and Tim Jewell (University of Washington) maintain "A Web Hub for Developing Administrative Metadata for Electronic Resource Management" at www.library.cornell.edu/cts/elicensestudy/home.html. This Web site features descriptions of other academic license-tracking projects, working documents, and a link to the *eresourcestudy* discussion list.

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Appendix 1
ERTS Tables and Element Sets—May 2002

Elements are grouped here as they are in screens presented to the user. Where portals display elements from other tables, those are shown in {}. Screens given here are those used by staff rather than the few simpler public views.

Table: Licensor

Our intent is to have one licensor record for all libraries that use that license, even if our terms differ slightly. There is a different field for each library to reference the complete license by URL to a vendor site or a local PDF file. Any differences in terms for ILL, printing, etc. would be described in the appropriate text fields.

Data appears in three separate displays: opening display with license conditions, technical information display, and statistics collection information display.

Field	Type	Purpose
Opening Display		
Licensor	Text	Organization that controls the license; chief link among the main tables
License URL Bryn Mawr	Text	URL to vendor license location or to local PDF of printed license. Bryn Mawr license
License URL Haverford	Text	Same: Haverford license
License URL Swarthmore	Text	Same: Swarthmore license
License URL Consortium	Text	Same: Consortium license (for joint licenses)
Online documentation URL	Text	URL location of online documentation for the licensor's products
License Conditions Section		
ILL allowed?	Values: yes, no, N/A, unknown	Quick info on ILL rights
ILL detail	Text	Explanation or exceptions if needed
Simultaneous user restrict	Text	Terms or limits on simultaneous use
Print restrictions	Text	Terms for printing
Remote access restrictions	Text	Terms for remote use
Reserve restrictions	Text	Terms for reserve use
SDI availability	Text	Notes on SDI services offered
Archival guarantee	Text	Long-term availability guarantees
Negotiation contact	Text	Licensor contact for contract negotiations
General comments	Text	Free text comments
Last updated	Date - autofill	
Updater initials	Text - initials	
Technical Information Display		
Technical contact	Text	Licensor technical contact for product access issues
{Service comments}	{Portal to service table}	Date, location, and beginning of each comment; link to service table
Authorization	Values: IP address, passwords, other	Type of authorization used for access

Authorization details	Text	Details of authorization
Content note	Text	Coverage, e.g., journals include letters, advertisements, etc.
Publication lag	Text	Lag time (or advance publication) vis-à-vis any print or other versions
Linking service	Values: Silverlinker, SFX, none, other	Which link servers are used with the product
Linking service note	Text	Linking service details
Statistics Information Display	**(Four sets of these fields, one for each library)**	
Statistics URL	Text	URL or other location to get use statistics
Schedule	Text	Statistics pickup schedule
Responsibility	Text	Person assigned to statistics
Instructions	Text	Special instructions for access or manipulation
Special Function Fields		
See Ref	Text	Creates a See reference in search results lists
LibraryChoice	Values: Bryn Mawr, Haverford, Swarthmore, Consortium	Facilitates retrieval of titles for one license and one library
Create Date	Date - autofill	

Table: Title

Title table includes information about individual titles subscribed through collections, titles of collections themselves, and titles of other electronic services such as indexes. The intent is to create a single place to search any electronic resource by its title and retrieve it.

The intent is to have one entry per title on which each library records which licensor they use for the title. The title information links back to the license table through the licensor name.

Field	**Type**	**Purpose**
Main Title Display		
Title	Text	Title of individual journal, of collection, of aggregation, or of electronic service
Tripod title URL	Text	URL to search the consortium OPAC by the title
Consortium licensor	Values: Licensors	Licensor source for consortium
BMC licensor	Values: Licensors	Licensor source for Bryn Mawr
HC licensor	Values: Licensors	Licensor source for Haverford
SC licensor	Values: Licensors	Licensor source for Swarthmore
{License detail}	{Portal}	Displays selected fields from selected licensor record; links to complete licensor record
Format	Values: e-journal, e-book, database, collection, aggregation, other	Specifies type of title. Collections are groups of titles from a single publisher; aggregations are groups of titles from several publishers.
{Current purchase records}	{Portal}	Library and amount paid from each related purchase record; link to purchase record
Collection Cataloging Information		**Instructions for cataloging constituent titles of collections and aggregations**
Tripod collection URL	Text	URL to search the collection title on the OPAC
Tripod titles URL	Text	URL to retrieve all cataloged constituent titles on OPAC
OPAC search index	Values: author, title, JournalTitle	Type of OPAC search for constituent titles
OPAC search text	Text	Text of OPAC search for constituent titles
Title level cataloging	Values: yes, no, other	Whether title-level cataloging is done for the collection
Cataloging decision note	Text	Details on decision
Cataloger	Text	Name of responsible library and cataloger
Cataloging method	Values: mailmerge, OCLC, other	Whether cataloging is done on OCLC, with MARC records created through mailmerge process, or other method
Excel file location	Text	Workstation and file location of mailmerge Excel file and Word template
Cataloging method note	Text	Details of cataloging method
Overlay tag	Text	Tag and content used to overlay/update title cataloging records
Marc tag	Text - repeating	Standard fields for cataloged titles in this collection
Marc indicators	Text - repeating	Indicators for the fields
Marc data	Text - repeating	Data for the fields
Cataloging content note	Text	Additional cataloging notes
Publisher-Related Information		
Title list URL	Text	URL for the collection/aggregation title list supplied by the publisher
Title list note	Text	Details about title list
Title list update frequency	Text	Frequency of title list updates
Vendor local contact	Text	Vendor contact information if different for this title

Table: Purchase Information

This table tracks payments for electronic services. Each record is for only one library and links back to the title table through the title and to the licensor database through the licensor name.

Field	Type	Purpose
Basic Information		
Title	Text	Copied from title record
Library	Value: BMC, HC, SC, or consortium	Library or consortium for this purchase
Licensor	Value: from licensor table	Initially copied from title record
Vendor	Value: from vendor file	
5 Years of Purchase Data, Set of Fields Repeated for Each Year:		
Purchase type	Values: aggregation/collection, free w/ print, extra w/print, electronic only, other	Purchase arrangement in relation to print
Price	Number	Subscription price; if extra with print, generally the extra amount.
Paid date	Date	
Expiration	Date	
Order number	Number	Order ID in IOLS
Price change from prev yr	Calculation	
Single Fields		
Price change percent	Calculation	Calculated for most recent and previous price
One-time charge	Number	Any one-time charge involved in purchase
One-time charge paid date	Date	
Purchase notes	Text	Details of payment, price structure of purchase
Special Function Fields		
Time before expire	Calculation	Fields used to calculate and send e-mail alerts 60 days before expiration.
Expiration e-mail sent	Date	
Time since e-mail sent	Number	
E-mail notification subject	Concatenation	
E-mail notification text	Concatenation	

Table: Vendor

This table tracks very basic information about vendors—organizations we make payments to for the electronic resource.

Field	Type	Purpose
Broker	Text	
General contact information	Text	
Consortium contact	Text	Used if different from general information
Bryn Mawr contact	Text	Same
Haverford contact	Text	Same
Swarthmore contact	Text	Same
Notes	Text	

Table: Service

This table is intended to allow users to enter comments on service problems and to track the reports.

Field	Type	Purpose
Licensor	Text	Copied from licensor or title database
Comment	Text	
Date	Date	Date of incident
Location	Values: BMC, HC, SC, remote	
Submitted by	Text	Initials or name

Table: Admin

This table holds addresses used for e-mail notifications sent from the PurchaseInformation database.

Field	Type
Library	Values: Bryn Mawr, Haverford, Swarthmore, Consortium
E-mail address	Text
cc Address	Text