

ELECTRONIC RESOURCE MANAGEMENT (ERM) - LIFE CYCLE OF AN E-RESOURCE: AN EVALUATIVE STUDY

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Abstract

Electronic Resource Management (ERM) systems were developed out of the struggle that librarians were having in managing the growing number of e-resources that were being added to their collections. This article discusses the use of the life-cycle of e-resources and examine the activities, workflows and data involved in managing an e-resources; discussed where the ERM system fits within the life-cycle; and look at some of the challenges remaining and some options for addressing these challenges. The e-resource life cycle has been discussed in detail with ERM evolution. It also reviewed the some of the existing ERM Systems with features and challenges faced by librarians and publishers. It also explained the EBSCO's A-Z ERM systems. It concluded the core competencies needed for library professionals in e-resources environment.

Keywords: Electronic Resource Management (ERM), A-Z ERM Systems, Electronic Resource Management Systems (ERMS), Life Cycle, Acquire.

Introduction

Several factors have rendered the job of librarians who deal with e-resources extremely challenging; the amazing growth of these e-collections in libraries, the large budgets involved in their acquisition, the endless variation in the packages offered by the publishers, interface providers and subscription agencies, the frequent changes in the business models and the lack of automated tools to deal with the complexity of e-resource management. When online journals were first introduced more than a decade ago, many looked ahead to the promise of the online information environment. Content would become richer with the introduction of audio, video and other interactive data. The objective of this paper is to provide insight into this new reality, discuss initiatives underway and tools currently available to help with the growing challenges presented by e-resources, and look to the future to consider the change in e-resource management.

Electronic Resource Management (ERM)

Definition

A system that supports the management of the information and workflow necessary to efficiently select, evaluate, acquire, maintain and provide informed access to e-resources in accordance with the business systems and license terms. (Anderson, Farb, Chandler, Jewell, Parker, Riggio, & Robertson, 2004).

The E-Resource Life Cycle

The challenges faced by the librarians have to be examined in the management of e-resources due to the large volume of e-resources, for which ERM has become necessary. The following Figure 1 presents five basic phases of the e-resource life cycle.



Figure 1: E-Resource Life Cycle

Each stage of the e-resource life cycle presents unique challenges for library staff.

Acquire

To acquire an e-resource often involves arranging trials, reviewing and negotiating a license agreement and understanding and agreeing to complex pricing models.

Provide Access

Unlike print where providing access involved cataloguing the resource and putting it on the shelf, providing access to e-resources can be much more complex. Content usually is not stored at the library; therefore, much work goes into managing links to the content, helping end users discover the content through A-to-Z lists, link resolvers or the library catalog as well as managing the authentication to ensure that authorized patrons can actually get to the content. This may be done by registering IP addresses with the publisher or through campus authentication and proxy servers.

Administer

Most e-resources are hosted on a site other than the library's Web site and these sites have administrative modules. One challenge is simply keeping track of where these administrative modules located and how to log into them. It is also a good idea to keep track of the settings that were made for each site along with the reasons why those setting were established. Some sites require the library to update its holdings information to ensure accurate linking. For full-text resources, library staff often answers questions relating to the rights to use articles for interlibrary loan, electronic reserves, etc. This information is normally found in the signed license agreement or the terms and conditions pages on the content

hosting site.

Provide Support

Access to e-resource may be interrupted for many different reasons. One challenge for the library is to determine what the problem is (Is the site down? Is there a problem with the campus proxy? Is there a problem with the subscription?) as well as how to fix it (who to call).

Evaluation

When considering whether or not an e-resource is providing value, the library would likely view any problem logs, obtain usage statistics and acquire input from faculty, staff and end users.

ERM Revolution

In 2001, a group of librarians who were battling with the growing complexity of e-resources realized they were all developing their own systems to try and cope with the challenges. They decided to join forces to seek a better way. The "ERM" revolution was the started with the insight of Timothy D Jewell, who, in 2001 wrote a paper about the challenges of managing e-resources and highlighting urgent need for a solution. The decision was to not wait for library vendors to come up with something, but rather be proactive. In 2002 Electronic Resource Management Initiative (ERMI) was formed - a group of librarians with the help of ILS vendors and other stakeholders researched the problem and the solutions. This collaboration became known as the E-Resource Management Initiative, or ERMI. A number of library system vendors were also very involved with ERMI. Innovative Interfaces, Inc. became a test-bed for many of the functional requirements and released its "ERM" system that same year. Innovative product became one of first of a

new genre of application – the E-Resource Management system. Innovative was followed by other library automation vendors, such as Ex Libris. Virtually all of today's ERM systems cite ERMI compliance, which is a strong endorsement of the work conducted by the ERMI committee.

The diagrammatic format of ERM Revolution given below (Pesch, 2006):

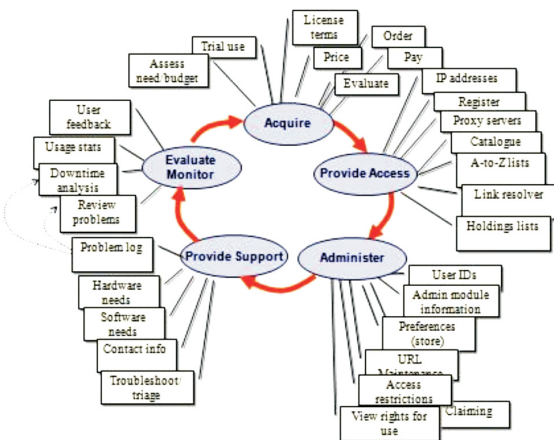


Figure 2: E-Resource Life Cycle: Libraries

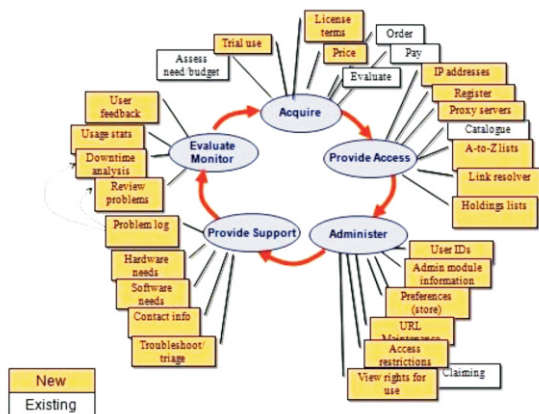


Figure 3: E-Resource Life Cycle: New Processes

Following is a partial list of ERM vendors and systems on the market today:

- Innovative Interfaces (Erm)
- Ex Libris (Verde)
- Vtls (Verify)

- Serials Solutions (Erms)
- Colorado Alliance Of Research Libraries (Gold Rush)

Most E-Resource Management systems provide the following:

- A central place to record information about e-resources, their suppliers, terms and conditions, usage, costs, etc.
- Tools for decision making and support
- Ticklers and alerts for tracking actions
- Contacts
- Incident reporting
- Process and workflow based on the e-journal life cycle
- Consolidation of usage data from various content sites.

However, even with these new tools, libraries are still struggling. A number of libraries have acquired ERM systems, yet many remain un-implemented. Two of the main challenges encountered when implementing an ERM system are collecting the information to go in the system and actually entering the data. The information that must be collected includes (Sadeh, & Ellingsen, 2005):

- Title lists for databases and packages
- Coverage information
- License terms
- Access and authentication options
- Cost information
- Usage data

The ERMI data dictionary identified 309 potential data points for collecting and tracking e-resources.

ERM System Features

The diagrammatic format of ERM System Features and related matters are given

below (Pesch, 2006):

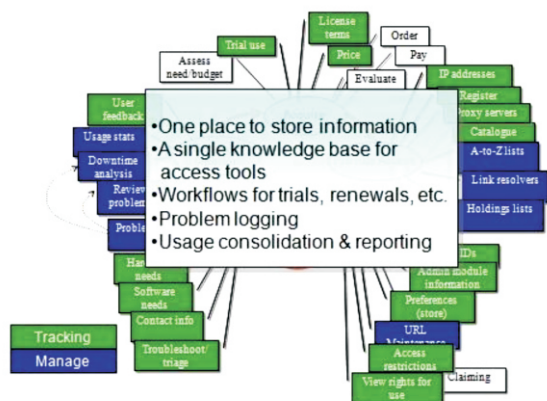


Figure 4: ERM Systems Features

The main features of ERM as follows:

- One place to store information
- A single knowledge base for access tools
- Work flows for trials, renewals, etc.
- Problem logging
- Usage consolidation & reporting

Three S's of ERM

The First S: Standards for Organizing and Distributing Information (Todd Carpenter, Managing Director, NISO).

The Second S: Systems for Electronic Resource Management (Bob McQuillan, Senior Product Manager, Innovative Interfaces).

The Third S: Subscriptions to Electronic Resources (Oliver Pesch, Chief Strategist, E-Resources, EBSCO Information Services).

Standards

The standards required within the ERM systems are as follows:

- Exchanging title lists (publisher to agent) KBART, ONIX-SPS
- Exchanging holdings lists (agent to library; agent to knowledge base vendor) KBART, ONIX-SOH

- Exchanging cost information (agent to library) EDI, CORE
- Exchanging license terms (publisher to agent; agent to library) ONIX-PL
- Exchanging usage data (publisher to library) COUNTER, SUSHI

Managing E-Resources – EBSCO's

With the introduction of electronic journals, new steps have been introduced into the process of acquiring, accessing and managing collections. Additional activities and information must be administered, supported, updated and monitored. EBSCO has identified 30 steps in the e-resource life cycle in a typical library. 24 of these steps are new with the e-journal environment. EBSCO has the expertise to:

- Simplify the processes linked to the acquisition of e-journals.
- Identify the problems linked to the management of e-resources and access.
- Prepare the library staff for future challenges and connecting people with information resources with

EBSCO^{host}® Electronic Journals Service

A-to-Z

EBSCO's A-to-Z service is a locator tool for all a library's e-resources, including e-journals, titles in full text databases and publisher packages. A-to-Z tracks the following for each journal:

- **Journal title, ISSN, Publisher**
- **Subject** (based on Library of Congress Classification Codes)
- **Provider** (databases/sites where journal can be found)
- **Coverage** (per journal/provider, including embargo information when available)

- **Durable URL** (per journal/provider).

A-to-Z: Key Functions

- Single tool for locating titles that make up entire E-Resource collection
- Coverage data and embargo information provided to guide end user to right sources
- Single click access to publisher sites
- Customize list with notes and icons
- Add and manage custom collections
- EBSCO's A-to-Z with MARC Updates: a single source of MARC cataloging for their entire E-Resource collection.
- EBSCO's LinkSource™: an OpenURL link resolver that enables the library to control item-level linking among their various online resources (databases, e-journal sites, etc).

EBSCO host Electronic Journals Service (EJS) is an e-journal access gateway on the Web

- For end users: Thousands of e-journals at 1 web site
- For administrators: Simplifies providing e-journal access and managing that access.

ERM Challenges

ERM challenges are not exclusive to librarians. Companies and organizations providing these tools have also experienced challenges in development. A representative from Innovative Interfaces, Inc., the first commercial vendor to offer an ERMS, highlighted the challenge of providing flexibility in an ERM system within an environment of evolving standards and initiatives. The most common issues are related to the fact that the data is complex; finding it is difficult; there is huge

amount of information to keep track of; and once you get it in you have the challenge of keeping track of changes. With budgets stretched to the limit and the e-resource staff already over-worked, it is difficult to find the time to do the extra work of managing the ERM as well as the day-to-day activities of managing e-resources. Also the amount of information is immense making input a challenge and keeping that information up-to-date is also a challenge (Ruttenberg, 2013).

Competencies Required for E-Resources Librarians

The electronic resources librarian understands the life cycle of e-resources in its ongoing complexity of multiple stages and processes. The competencies required are as follows (ALA's Core Competences for Librarianship, 2009):

1. The electronic resources librarian has extensive knowledge of the concepts and issues with

- A complete and extensive understanding of the overall life cycle process of e-resources in its ongoing complexity and multiple stages and processes.
- A thorough understanding of records management in the sense of coordinating, organizing, and managing complex records related to acquiring electronic resources.
- High-level organizational and records management skills in order to actively coordinate and manage the often-complicated records needed to track e-purchases, subscriptions, access set-up and maintenance, and licenses across the multiple departments usually involved in electronic resources.
- Knowledge of collection analysis and

development.

- Thorough knowledge of acquisitions processes in order to manage e-resources budgets, particularly: encumbrances, Acquisition module functions, split funds and other situations particular to acquisition of journal packages that may not have a single discipline in common, service and lock in charges, adjusting for discrepancy between fiscal and calendar year accounting.
- Thorough knowledge of licensing and the legal framework in which it takes place. Since licenses govern the use of most library e-resources and have conditions that cannot knowingly be violated, an e-resource librarian must demonstrate familiarity with how and for whom an organization licenses content, and the concepts, applications and implications of licensing terms/language and issues, such as archival / perpetual access and interlibrary loan.
- The ability to apply the principles involved in the organization and representation of recorded knowledge and information to the organization of e-resources in order to select and provide access points that are useful to the communities they serve (Isfandyari-Moghaddam, 2014).

2. Technology: providing access to electronic resources.

Provision of and maintaining access to electronic resources is a primary responsibility of e-resources librarians.

This responsibility requires intellectual and practical in-depth knowledge of the structures and software underlying the e-resources access provision, and their interrelatedness (Medeiros, Chandler,

Miller, & Riggio, January, 2008).

3. Research Skills:

- Recognizes the need for data, selecting appropriate data analysis methods and utilizing data (e.g. resource usage statistics) persuasively to inform decision making
- Understands the complex range of data generated by and related to e-resources from the sources, as well as vendor web sites and proprietary products, and how these data are interconnected or distinct.
- Has the ability to collect, analyze, manipulate, and provide meaningful interpretation of data using relational databases, spreadsheet and word processing programs, and online tools.
- Possesses a broad understanding of the e-resources accessible through the organization and the ability to examine and evaluate current and potential purchases in objective and user-centered ways (assessment).
- Understands and uses established research methods, including bibliometrics (for collection assessment) and systems analysis (for troubleshooting).
- Understands and uses methods of assessing and evaluating the specifications (Choy, 2011).

4. Effective communication is essential

5. Supervising and Management

6. Trends and Professional Development.

The electronic resources librarian has an abiding commitment to ongoing professional development through continuing education, attendance at professional conferences, webinars, following related blogs and listservs, and

other learning venues.

7. Personal Qualities

- Flexibility with change.
- A high level of tolerance for complexity and ambiguity
- Unrelenting customer service focus
- Skillful time management (ALA's Core Competences for Librarianship, 2009)

Conclusion

There is no doubt that libraries need a system to manage the e-resources throughout the resources' life cycle. Such a system should not only deal with the daily tasks related to e-resources but also provide comprehensive analyses related to library's expenditure on e-materials. ERM system can open up new horizons related to collection management in which information about the global marketplace and about the institution's collection and expenditure can serve as decision making tools for library staff. ERM system acts as a starting point for the users with library products like link server, meta-search system or library OPAC. Library and information science professionals should technically understand the ERMS and take it as a challenge and satisfy the users in the life cycle of e-resource environment.

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