

The next step in the evolution of citations involved web-based resources. This approach takes advantage of the ubiquitous infrastructure of the Web, allowing library users to access many different citation databases to which the library may subscribe from outside the library.

The model of web-accessible citation databases, while providing a level of convenience for its users, also presents some challenges. As a separate brand-name product, the library user may not even be aware that the product is made available by license fees paid for by the library, even if they link to it from the library's website.

Library users also have difficulty in knowing what kind of information is provided by each of the many different citation databases their library might make available to them. Although all the web-based citation databases follow the same general set of conventions for entering searches and viewing results, differences among them exist. Figuring out how to use each citation database can burden library users.

Using a citation database isn't an end in itself, but rather a tool for finding articles and other resources relating to the searcher's research topic. Linking from the citation to full text has become a standard expectation of the current information environment. Providing links that reliably take library users from a citation database to full text or from citations within one article to the full text of another article also is an expected capability.

Several technologies, such as OpenURL-based link resolvers and federated searching, have emerged to address many of the issues that surround the library's involvement with article-level information and electronic content.



## Electronic resource management

Core ILS functionality includes detailed functionality related to print subscriptions. Serials modules with predictive check-in capabilities, the ability to load subscription invoices and produce claims for missing issues, renewals, routing list management, and the like are all standard fare.

The traditional ILS modules are ill-suited to managing the library's collection of electronic journals and databases. Many aspects of electronic resources, especially those related to the licensing agreements, do not fit well within functionality designed for managing print journals.

A typical license agreement will specify the number of simultaneous users allowed to access the system, the effective dates of the license, conditions under which the license can be terminated, whether remote access to the resources is allowed, whether the resource can be used to fill interlibrary loan requests, and many other details.

Also important to record are the telephone numbers and email addresses for customer assistance or technical support. Having a scanned digital image of the signed contract available and the full text of the contract searchable may even be beneficial.

Many libraries have informal systems for managing the licenses associated with their electronic content. But, in the same way that most libraries outgrew manual or homegrown systems for managing their book budgets and implemented acquisitions modules specifically designed for the task, many librar-

ies have far more licenses for electronic content than they can track without an automated system.

Automated tools for managing electronic resources are just beginning to emerge. The Digital Library Federation launched the DLF Electronic Resource Management Initiative, which involves many projects and activities. Efforts undertaken so far include conducting a survey of the current library practices and some of the local systems that have been developed and exploring a conceptual model of the processes involved. It also has conducted a workshop in partnership with NISO and documented the data elements that need to be tracked.

In 2004, only one ILS vendor offered an electronic resources module. Innovative Interfaces offered software called Electronic Resources Management that operates either as an extension of the Millennium serials and acquisitions modules or as a stand-alone application for libraries that use other automation systems.

## Integration beyond the library interface

As libraries implement an expanding arsenal of web-based applications, they need to be concerned about how the applications work together. A library web environment includes at a minimum HTML pages that provide descriptive information about the library and its services and the web-based online catalog. But it also may offer an interlibrary loan system, electronic reserves, digital library collections, proxy services to allow remote access to restricted resources, link resolvers, and federated searching.

Libraries need to ask if a single information architecture underlies the components, or does each manage its part of the library's information resources independently? Do they share a common look and feel? Do they each require library users to log in separately, or does the library's environment have a single login that carries the proper credentials through all the applications and services?

In this view, the ILS and its web-based catalog are but a part of the overall library web environment. In the selection and implementation of the ILS, consider what features it offers that foster integration with other library-provided applications and services.

The current model of library automation centers on a web-based online catalog, however enhanced, that offers information about the library's offerings and delivers end-user services through a dedicated web interface. Though that model will no doubt continue indefinitely, libraries will increasingly have an interest in participating in higher-level portals.

A university library may, for example, want to create a portal environment for its students that includes courseware, the library catalog, email, and other web-based services in a single interface. They can all be integrated in ways that not only share a common look and feel but that also work together to share a single login and allow the student to navigate easily among the functions available.

As this model of organizational portals takes hold, library automation systems will need to be less concerned with owning and controlling the landscape of the user interface directly but will need the ability to offer data and user functions as services provided through higher-level applications and interfaces.

*SOURCE:* Marshall Breeding, "Integrated Library Software: A Guide to Multiuser, Multifunction Systems," *Library Technology Reports* 40 (January/February 2004): 8-13, 16-17.



## Questions to ask before beginning a digital project

*by the Collaborative Digitization Program*

**WHAT IS YOUR PURPOSE?** There are many reasons for digitizing collections. Some of the first questions you should ask are:

- For what purpose do you want to use the digitized materials, and what are the benefits of having this collection in digital form? Is there a demand for the content of these materials in digital form?
- What are the goals of your project? What do you hope to accomplish? Is the main goal increased access or decreased handling of fragile originals (preservation)? Or both?
- Will the digital images replace or supplement existing originals? Will the digitized materials complement existing collections in online or print form, or might they fill a lack of digitized materials in a certain unique subject or topical area?

See Dan Hazen, Jeffrey Horrell, and Jan Merrill-Oldham, *Selecting Research Collections for Digitization* (Washington, D.C.: Council on Library and Information Research, August 1998), [www.clir.org/pubs/reports/hazen/pub74.html](http://www.clir.org/pubs/reports/hazen/pub74.html).

**Who is your audience?** Other important questions to ask at the outset of any digitization project are:

- Who is your intended audience? This will determine the parameters of the project at all stages of digitization.
- Often your audience can be divided into primary (in your service area), secondary (related to your service area), and tertiary (internet users at large) user groups.
- What are the needs of your users, and how can you best serve them? This question may apply to modes of access, what search features and web interfaces will be most helpful to your users, what types of browsing might be appropriate, how users intend to use the information, scanning practices appropriate to intended use of the materials, etc.

See CDP's Market Segments and Their Information Needs, [www.cdphheritage.org/digital/reports/rsrcUsers.cfm](http://www.cdphheritage.org/digital/reports/rsrcUsers.cfm).

### **What are the physical characteristics of the collection?**

- What is the physical condition of the materials? How do the originals need to be handled during scanning to prevent further deterioration?
- What is the format of the collection (negatives, black and white, color, text and graphics, etc.)?
- What size are the materials? Do you have the capability to scan oversize materials?