[Emerging technology trends in libraries](https://www.sciencedirect.com/science/article/pii/B9781843346388500060)

Anthony S. Chow, Timothy Bucknall, in [Library Technology and User Services](https://www.sciencedirect.com/book/9781843346388/library-technology-and-user-services), 2012

Integrated library systems

An integrated library system (ILS) is a complex program/database that brings multiple library functions together in a (hopefully) seamless manner. The individual functions, usually called ‘modules’, include such things as:

■

the OPAC (or online public access catalog), which is the interface library users use to search the catalog;

■

acquisitions module, for keeping track of book orders and expenditures;

■

serials module, for keeping track of newspaper and magazine subscriptions and check-in;

■

cataloging module, for entering MARC records into the catalog so that items can be found in the OPAC;

■

circulation module, to keep track of what is checked out and when it is due back, and to keep up with patron information such as phone numbers, addresses and library cards.

Of the many technological decisions and implementations in libraries, the ILS receives by far the most attention. This is largely because the ILS has typically received the most usage of any library system. But it is also because, unlike most library technology, almost every single library employee interacts with the ILS on a regular basis. In fact, many library employees (particularly in the acquisitions and cataloging departments) spend the majority of their work day using the ILS.

Because an ILS selection can have an enormous impact on the workflow and jobs of most library employees, it is usually the one technological decision that is truly made on a library-wide basis. In a way, it is wonderful that everyone in the library is so interested in, and wants to be involved in, selecting the ILS. But on the other hand, trying to involve everyone is very difficult – especially if they all feel very personally invested in the outcome.

The breadth of involvement in the ILS selection process will probably diminish over the next few years, as the centrality of library catalogs shrinks. When [online catalogs](https://www.sciencedirect.com/topics/computer-science/online-catalogue) first became available in the 1980s, a very high percentage of library patrons used the catalog and everyone using a library computer was searching the catalog. Today, the catalog continues to play an important role, but competes with many other information resources in high demand by our users (e-mail, web, databases, e-books, etc.). In the future, the catalog will probably be searched less and less often as a stand-alone database and will instead be searched more often in conjunction with other information resources.

The current library paradigm divides information into many different silos, each of which must be searched independently by users. If someone wants a physical book that the library owns, they should search the library catalog. If they want an article, they should search an article database. If they want an older e-book, they should search Google Books. Librarians may enjoy mastering this complex and bifurcated information environment, but library users do not. When faced with an array of search options and locations, the invariable response is, ‘Why can’t this be a single search box, like Google?’

Library ILSs have been information silos in another sense, too. For the most part, each library runs its own ILS locally on its own hardware. These ILSs contain MARC records that are very similar to records in other ILSs. In other words, multiple libraries with copies of the same book are likely each maintaining identical (or very similar) library [catalog records](https://www.sciencedirect.com/topics/computer-science/catalogue-record" \o "Learn more about Catalogue Record from ScienceDirect's AI-generated Topic Pages) for that item. Looked at across the entire profession, this model involves a high degree of duplication of effort for both records and hardware maintenance. In the current climate of budget cuts and [austerity](https://www.sciencedirect.com/topics/social-sciences/austerity), it seems likely that libraries will move away from the local ILS model and will instead share a cloud-based library catalog. At the cost of some local control and ability to customize, libraries should be able to more cost-effectively share a single catalog and a single copy of each MARC record. This model of resource sharing fits well with librarians’ strong record of sharing through such vehicles as OCLC and [interlibrary loan](https://www.sciencedirect.com/topics/computer-science/interlibrary-loan).

The only product currently in development that will allow libraries to truly share data and hardware on a global scale is OCLC’s WorldCat Web-Scale Management Services. At the time of this writing, it is too early to declare OCLC’s efforts a complete success, but they are clearly on the right strategic path. If, for any reason, OCLC Web-Scale fails to live up to its potential, it seems highly likely that another cloud-based ILS will emerge and allow broad resource sharing and enormous collective cost savings across all library types. Within the next three years, we will see significant movement away from the local ILS and towards a shared, cloud-based ILS.

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[Introduction](https://www.sciencedirect.com/science/article/pii/B9781843347606500151)

Holly Hibner, Mary Kelly, in [Making a Collection Count (Second Edition)](https://www.sciencedirect.com/book/9781843347606/making-a-collection-count), 2013

Chapter 3 shows how an integrated library system (ILS, sometimes referred to as an automation system) can be mined for a wealth of data. Here we focus on metrics, or ways we can measure the collection and its use. This chapter also describes how to audit a collection to see if there is an error rate among the [catalog records](https://www.sciencedirect.com/topics/computer-science/catalogue-record" \o "Learn more about Catalogue Record from ScienceDirect's AI-generated Topic Pages) that indicates a larger problem. This goes hand-in-hand with the workflow analysis suggested in chapter 2. If a library’s workflows are efficient, a collection audit should reveal that the collections are properly indicated in the catalog. A breakdown in either the workflow or collection performance could lead to a need for more in-depth study.

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[Academic library consortia and the evolving role of electronic resources and technology](https://www.sciencedirect.com/science/article/pii/B9781843346685500055)

Anne C. Elguindi, Kari Schmidt, in [Electronic Resource Management](https://www.sciencedirect.com/book/9781843346685/electronic-resource-management), 2012

The transition to web-scale management

Even consortia that share integrated library systems will face challenging questions when deciding whether or not to share web-scale management services once they are ready for library adoption. An expectation of these developing systems is [interoperability](https://www.sciencedirect.com/topics/computer-science/interoperability) with university-wide enterprise financial and student management systems, which will be challenging enough on a single campus and much more so for the diverse systems and needs across many campuses. It seems inevitable, however, that many consortia which have partnered for years in library systems (and currently rely on a central staff for many of their systems needs) will expect to be able to migrate together. The challenges outlined above with the shared ERMS will continue in this new environment, as many of the web-scale management systems have a heavy emphasis on electronic resource workflows and requirements.

Libraries wanting to partner together in web-scale management environments might help guide a definitive shift in the area of records management. The new structure now promoted by some emerging web-scale [management systems – knowledge](https://www.sciencedirect.com/topics/social-sciences/knowledge-management-system) bases that cover *all* formats – takes the accepted and successful concept of the knowledge base from the electronic resources world to the rest of the library. Also on the horizon is Resource Description and Access (RDA), which to be fully implemented would have to be represented by a different format than MARC. These changes are immense, but they hold clear potential for functions such as discovery and resource sharing. It seems possible that libraries acting together will play a large role in taking the big step to this new environment because it holds the potential for savings through a shared subscription, and this can be a significant motivating factor.

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[Introduction](https://www.sciencedirect.com/science/article/pii/B9781843346067500147)

Holly Hibner, Mary Kelly, in [Making a Collection Count](https://www.sciencedirect.com/book/9781843346067/making-a-collection-count), 2010

Chapter 3 shows how an integrated library system (ILS, sometimes referred to as an automation system) can be mined for a wealth of data. Circulation rates, inventory, item status, and other data can be analyzed to get a picture of how a library collection is used. Prioritizing and making difficult decisions with respect to specific materials and resource allocation can be achieved more easily with supporting data. This chapter also describes how to audit a collection to see if it is performing as intended. This goes hand-in-hand with the workflow analysis suggested in Chapter 2. If a library’s workflows are efficient, a collection audit should reveal that the collections are performing as intended. A breakdown in either the workflow or collection performance could lead to a need for more in-depth study