

# NextGen Acquisitions: A Paradigm Shift for a New Era

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## NEXTGEN ACQUISITIONS: A PARADIGM SHIFT FOR A NEW ERA

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### Abstract

Current integrated library systems traditionally combine both user discovery and inventory management applications, merging very different functional needs into a single environment. As libraries look to the future, our service platforms must evolve in a way that enables both more efficient management and more effective presentation of a wide array of library resources. For many libraries, the first step in the process has been to decouple the user discovery and delivery environment, separating the needs for patron presentation from the requirements for back-office management. In this way, libraries have attempted to improve the (end)user experience.

Now, we must examine how new technologies and standards can help the library take the next step – to revolutionize its management activities. Until recently, “next gen” integrated library system innovations have focused on **discovery**. In what ways can we improve **inventory management**? How can network-level workflow and data management, linked data and semantic Web support, and more flexible metadata schemas radically change both staff productivity, information quality, and, ultimately, the user experience?

Next-generation library service frameworks will leverage these opportunities to provide better information and services to users in a variety of user spaces; to incorporate data from a diversity of formats and communities; to create data that can be used outside of the traditional library context; and to reduce costs associated with metadata and other inventory management activities.

### The ILS, past and present

Many of us are familiar with the origins of the ILS. Essentially, it was an automated version of the card catalog, a system developed in the 19<sup>th</sup> century to meet 3 primary objectives (as stated by Cutter)<sup>i</sup>:

1. to enable a person to find a book of which either is known.
2. to show what the library has
3. to assist in the choice of a book

These objectives fall under two main goals that most patrons and library staff still expect an ILS to achieve: **inventory** (what does a particular library have?) and **discovery** (what do they have that fits my research needs?). Within an ILS, acquisitions modules, serials check-in, and circulation functions all provide various types of inventory information. Cataloging processes and OPAC interfaces provide serve as the means for discovery.

These systems, which essentially haven’t changed for decades, have certain characteristics that are becoming obsolete in the era of electronic resources. First of all, the ILS is essentially a local, siloed database. It does not communicate easily with other systems. Also, because it is local, it requires a large amount of data manipulation to populate the database with a

combination of local records, shared catalog records, and vendor records, which are becoming increasingly difficult to keep accurate over time. In the print era, the catalog cards (and later the opac displays that looked just like catalog cards), represented all the titles owned by a library. Today, because of acquisition of resources with **access** rather than **ownership** models, our collections and the metadata presented in these records are much more fluid and do not conform to the containers in which we maintain them.

### Problems with “inventory” in today’s ILS framework

Because of existing ILS models in which acquisitions and cataloging functions are linked with each other and dependent upon importing MARC records into a local system, elaborate, time consuming procedures are created to try to track resources that are purchased and present them to the public in a uniform way.<sup>ii</sup> Our system of copy-cataloging results in a mind-boggling duplication of effort involving manual exporting, importing, and manipulating of records (see *Figure 1*). Once the records are in our systems, there is a great chance that the master record will be changed at some point in the future. When that happens, our local record is obsolete, unless we happen to notice the change. What is our return on investment for all of this work? We end up with a local database filled with out of date and sometimes inaccurate information.

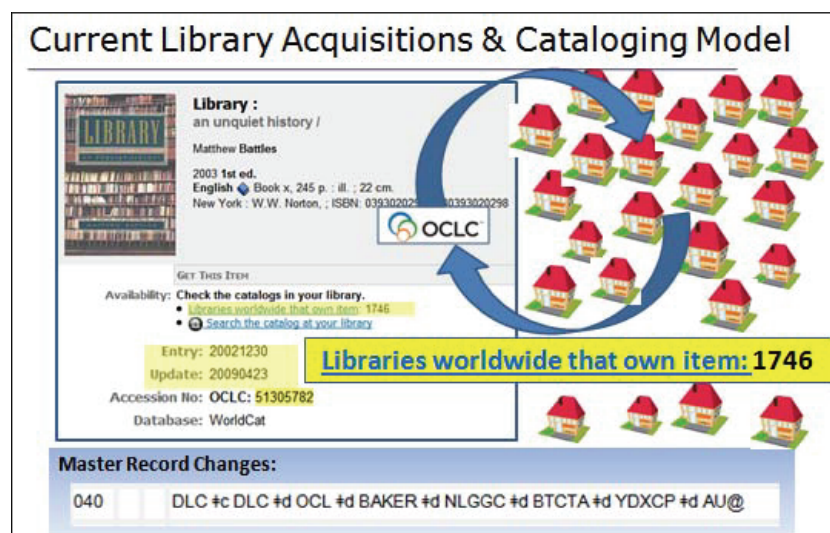


Figure 1

Furthermore, this represents the effort to track just **one** of our inventory systems – the library catalog. Most of the resources we purchase are bundled packages or databases which often have changing holdings, making it impossible to accurately capture our potential “inventory” in our ILS at the point of purchase. To track these resources and to make them accessible, we rely on secondary systems such as journal and database A-Z services (hosted by a vendor or locally created). Many of us also have locally generated content such as unique special collections and institutional repositories which often have metadata displayed in yet another “inventory” system. Finally, unless we invest in a federated search tool, much of our content (i.e. articles in proprietary databases) is not locally housed. So now we have at least four points of “inventory” that our users are required to navigate.

## Problems with “discovery” in today’s ILS framework

We are not even meeting the minimum expectation: that we provide an accurate listing in one portal of what our patrons can find in our library. Add to that the changing expectations of our users today. Beyond identifying and locating the libraries’ materials, they expect intuitive interfaces, seamless linking to and from different interfaces, user-generated content, and personalized features, as they are accustomed to finding in other websites. With effort, we can incorporate these features to our existing OPACs, primarily by using “Discovery Tool” layers that pull information from our ILS and display it in a prettier and somewhat more functional way. But the underlying metadata is still often inaccurate and incomplete.

Additionally, evidence would suggest that most patrons, and especially those in Academic Libraries, don’t want to limit their research to just what the library has. Data gathered by ARL over a 17 year period shows a 16 % drop in circulation transactions and a dramatic **168% increase in interlibrary loan requests.**<sup>iii</sup>

Rather than going to the library on its terms, they want the library to come to them.<sup>iv</sup> Most library users have already discovered the most effective discovery tools out there. Google, Amazon, and Worldcat.org, to name a few, are much more comprehensive and effective tools than any ILS today. By applying the same search term to a classic ILS OPAC, a “NextGen Discovery” tool, and open web search interfaces such as Google Books, the problems will quickly become apparent. As an example, we searched for “library history” in a classic OPAC and the first, relevancy-ranked result was *Botanical Medicine for Women’s Health*, by Avivia Rom.

Some librarians argue that Google cannot replace the catalog because one does not retrieve quality search results from the web.<sup>v</sup> Data collected by JSTOR would contradict that. In fact, the number of inbound links from Google has increased steadily since 2001 and for several years has been dramatically higher than inbound links from “known linking partners” such as link resolvers and ILS systems.<sup>vi</sup> OCLC’s landmark 2005 study, “Perceptions of Libraries and Information Resources,” revealed that 2% of library users start their search at the library website while 89% start their search on the open web.<sup>vii</sup>

### What do libraries want in an ILS?

To more effectively describe and manage our resources, we need a system that operates on a network level and supports sharing of common information, similar to the administrative structure of an openURL link resolver (see Figure 2).

# Model for a "NextGen" ILS

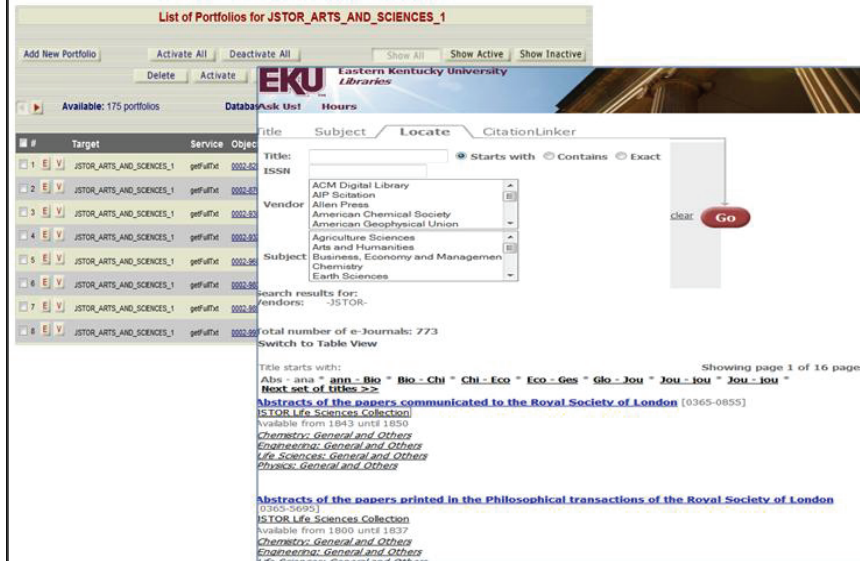


Figure 2.<sup>viii</sup>

In this example, a JSTOR collection appears in EKU's SFX knowledge base(left) and in our Journal A-Z list (right). We simply checked a few boxes in the KB to indicate that we subscribe to the collection. As titles are added and/or dropped from that collection, they are updated in the KB and we do not have to worry about updating our own records – our A-Z list is automatically updated. There is of course ongoing maintenance, problems with information in the KB, and some need for local customizing. But generally, and especially with large, commonly held databases, the system is remarkably straightforward and seamless.

What if ordering our resources was this straightforward? What we were only required to check a few boxes and the public display would be automatically generated, and then automatically updated if there were any future changes?

## Building an architecture that supports changing needs

Given the trends and needs discussed in this presentation, a new framework for library services is essential (see Figure 3). Ex Libris is taking the first step in moving to this new framework by implementing a system called "Unified Resource Discovery and Delivery."<sup>ix</sup> By separating the presentation of the library's resources from the back-office management functions, libraries have greater flexibility in presenting their resources in ways that are more intuitive and more easily accessible to patrons – either through a commercial interface or through the open Web.

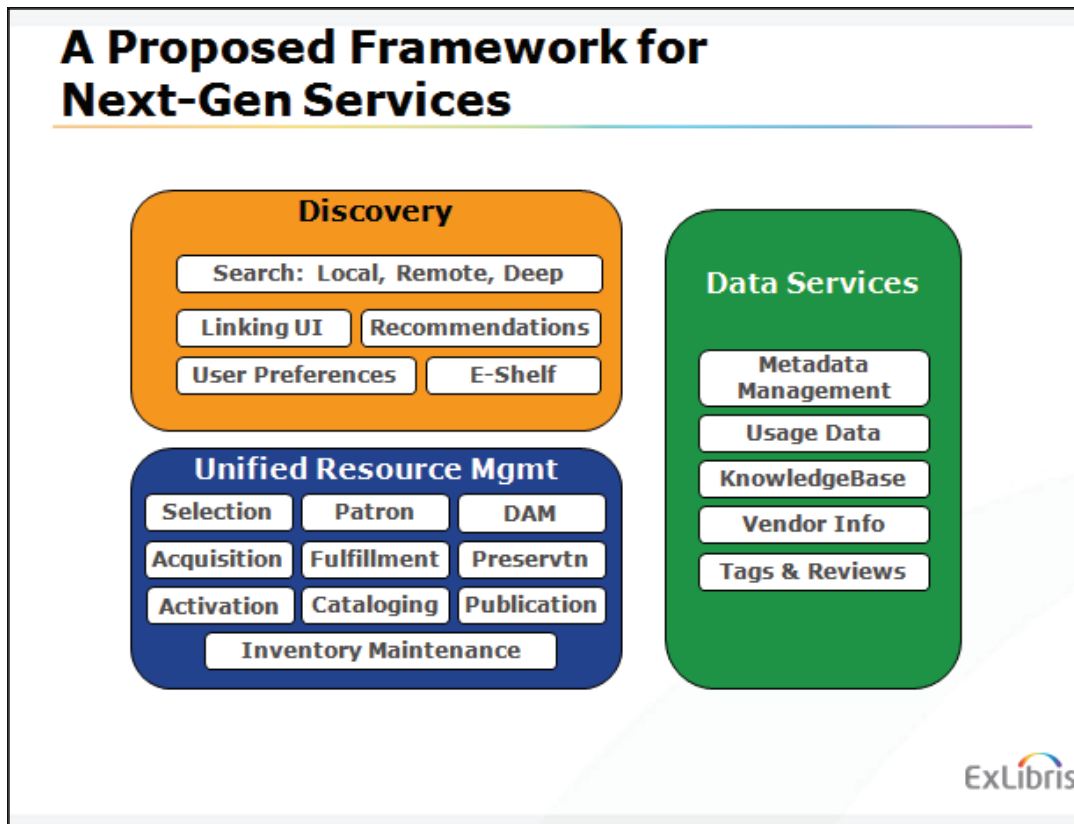



Figure 3

Now Ex Libris is turning its attention to making back-office management processes more efficient – and starting to build platforms that support today’s needs while anticipating tomorrow’s. In this management environment, a key issue is *unification* – managing resources regardless of format or method of acquisition. In addition, the Unified Resource Management system (URM) focuses primarily on managing inventory and provides a suite of applications that enable more efficient administration of the library’s collection.

Finally, as systems move to the network level, we have an opportunity to consider how best to deliver services around common, shared resources. Complementing both the discovery and URM environments, a Data Services platform provides centralized access to a suite of *community* resources – metadata, an e-resource knowledgebase, vendor details, user tags and reviews, and more. Rather than duplicating work across institutions, something no library has time and resources to continue, staff members can easily access, use, and enhance shared information.

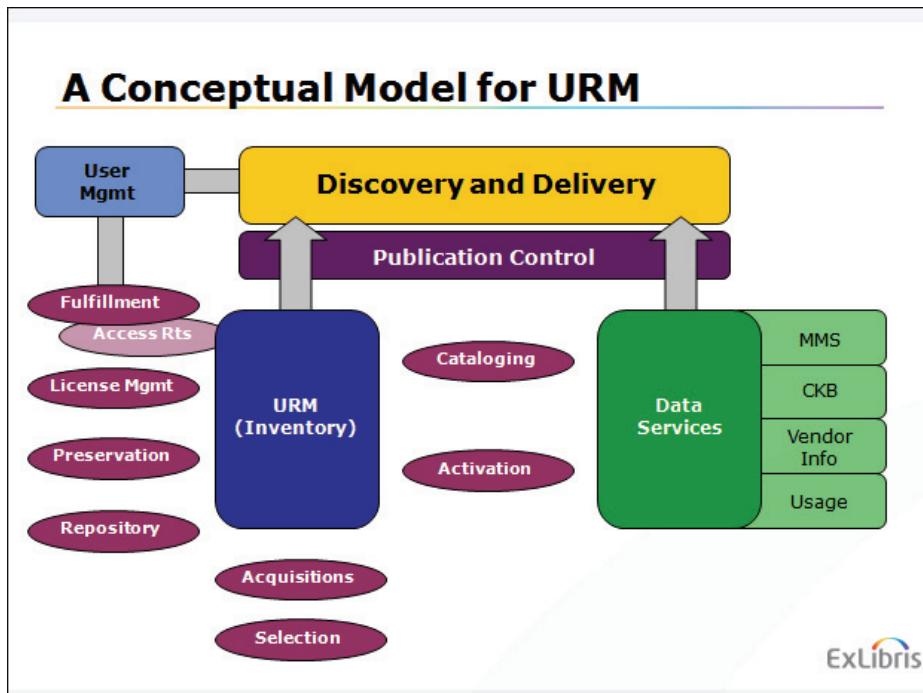


Figure 4

The conceptual model for URM (see Figure 3), then, leverages each of the major components of the platform. Looking specifically at the URM and Data Services components, we see how these two aspects of the environment work together. Some workflows and applications rely solely on the inventory, while others – like activation and cataloging – pull together the necessary functions from both Data Services and the URM inventory. The inventory represents the library’s LOCAL holdings and items; it links to the Metadata Management System or central Knowledgebase to access, for example, a complete metadata record for a resource or the availability and linking information for an e-book. The goal is to balance the need to retain uniqueness and “localness” with the benefits of collaboration, cooperation, and the potential of leveraged community information.

#### Some examples of how a new framework supports better management

Particularly helpful in this environment is a new component called “Publication Control”. This new module enables the library to publish its “catalog” -- in part or in whole – to discovery spaces. Not only does this function make it easier to publish a new books list or course reading materials, but a library can publish directly from the Data Services environment. This option simplifies library management activities in which a resource needs to be provided for discovery, but has no inventory-related management tasks associated with it.

The URM enables the library to publish the contents of databases and packages in the central Knowledgebase without adding metadata for each record to the inventory. In addition, the URM supports the simplified management and discovery processes made necessary by new business models for electronic resources. Today, libraries are loading thousands of records into their “catalog” (inventory) to support new models of user-driven acquisition. Adding the records to the inventory enables discovery of those resources – but many of them will never actually require management within the inventory and will be expunged

over time. Instead, library staff spend lots of time loading and “expunging” records in the ILS, as well as managing the corresponding information in the link resolver.

Rather than loading bibliographic records into the inventory to enable discovery, the URM enables libraries to publish records and subsequently add any user-selected resources to the inventory for appropriate management. The model is simple – a single entry in the inventory links to the collection of e-book titles maintained in the CKB and described in the MMS. As a title reaches the license-driven purchase limit, the individual title can be added to the inventory for invoicing, licensing, etc.

Another example of improved workflows enabled by a new infrastructure is the selection process. Since our ILS systems have traditionally required that a descriptive record be created before *any* work can take place around it, libraries have not had the opportunity to integrate selection processes into the larger context of budgeting, requesting, inventory management, and so on. The URM framework takes advantage of the rich metadata in the centralized MMS to support these activities. Incoming recommendations – whether from vendors, patrons, new item alerts from the CKB, and so on – are enriched with metadata from the MMS and routed to individual selectors based on profiling data.

By moving the library services framework to the network level, libraries also have new options to use community information in considering the purchase of a new resource:

- They can reference the holdings of other libraries – within a consortium or within the same geographic region, which supports the increasing need to lower costs through resource sharing. In addition, an individual selector may wish to check a peer institution’s inventory in a specific discipline, since comparable curricula and collection development policies may inform a selection decision.
- They can check usage of a resource at other similar libraries, which may give an indication of how heavily the resource will be used locally.
- They can use the Knowledgebase to determine title availability.



## Conclusion

Libraries today face many challenges and ever-changing responsibilities. Our current systems are ill-suited to these shifting responsibilities. How can a new ILS framework help us meet these responsibilities?

- We are shifting from primarily collectors of resources to service-oriented information providers. Since “acquisition” underpins access, we need to improve internal processes to ensure higher levels of service.
- Users are increasingly seeking non-print and multi-media formats. Unified back-office workflows supported by “smart fulfillment” options can assist our search for “alternative” resources.
- We are moving away from localized, siloed collections towards the concept of a global “Library without walls.” A new framework could facilitate new means of delivery (or integrate existing delivery systems) resulting in less emphasis on where the object “lives.”
- We are moving from “just in case,” expert-mediated collecting and preservation to “just in time” and user-driven acquisition. As described in the previous section, a new framework would greatly simplify this process.
- We continue existing trends toward more outsourcing. Interoperability, centralization of services, and leveraging of community information can be achieved.
- The library comes to you.

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## Notes

<sup>i</sup> Cutter, Charles. “Rules for a Printed Dictionary Catalogue” in *Public Libraries in the United States of America their History, Condition, and Management*. Washington: GPO, 1876. <http://books.google.com/books?id=rj-f4-Ps-AkC> Web. 15 January 2010

<sup>ii</sup> For an excellent example of the elaborate methods utilized by technical services departments to manage metadata, see the Cornell Library Technical Services department Procedures & Documentation website - <http://lts.library.cornell.edu> Web. 15 January 2010

<sup>iii</sup> Kyrillidou, Martha and Les Bland, eds. *ARL Statistics 2007-2008*. Washington, DC: Association of Research Libraries, 2009. <http://www.arl.org/bm~doc/arlstat08.pdf> Web. 15 January 2010

<sup>iv</sup> Needham, George. “The Library and Information Environment” at *The Future of the Integrated Library Systems Symposium*. September 14, 2007. <http://www.ltls.org/ilssymposium2007/presentations/GeorgeNeedham-rev.ppt>

<sup>v</sup> Mann, Thomas. “The Peloponnesian War and the future of Reference, Cataloging, and Scholarship in Research Libraries,” June 13, 2007. <http://guild2910.org/Pelopponesian%20War%20June%2013%202007.pdf> Web. 15 January 2010

<sup>vi</sup> Heterick, Bruce. “The ‘Google Effect’ at JSTOR” [2008] <http://tinyurl.com/n29cu2> Web. 15 January 2010

<sup>vii</sup> <http://www.oclc.org/reports/2005perceptions.htm>

<sup>viii</sup> Eastern Kentucky University Libraries’ Journal A-Z list: <http://sfx6.exlibrisgroup.com/eku/azlist/default>

<sup>ix</sup> Ex Libris’ URM White Paper:

<http://www.exlibrisgroup.com/files/Solutions/TheExLibrisFrameworkforNextGenerationLibraryServices.pdf>