



# Smart Libraries<sup>TM</sup>

Formerly Library Systems Newsletter<sup>TM</sup>

50 East Huron Street, Chicago, Illinois 60611-2795, USA



## Smarter Libraries through Technology:

### *Open Source Alternatives in Library Systems Procurement*

By Marshall Breeding

Open source today stands as a routine part of the library automation industry. In the integrated library system arena, Koha and Evergreen have been implemented by hundreds of libraries here in the United States, and especially for Koha, all around the world. OPALS has been implemented by hundreds of school libraries as well as church, synagogue, and other special libraries. Large academic and research libraries have complex operational needs and increasingly require automation systems able to help them manage and provide access to collections dominated by digital content. The new genre of library services platforms has emerged to address these realities. Examples include Ex Libris Alma, Sierra from Innovative Interfaces, OCLC's WorldShare Platform, and Serials Solutions upcoming Intota. In this issue of *Smart Libraries Newsletter*, we turn our attention to Kuali OLE, a library services platform developed through a grant-funded, community-based endeavor.

Libraries tend to be cautious in considering library automation systems.

Only a small minority are able to justify the level of risk associated with selecting an unproven system, and even fewer able to invest in a development project as have the Kuali OLE partner organizations. Most libraries feel more comfortable with a system that has been successfully implemented by organizations of at least their own size and complexity. So how does a new open source system find its way into consideration?

Opting for an open source automation system come with a different set of business issues relative to those based on commercially licensed software. By definition, selecting an open source system eliminates the license fees. With commercial software, most of the revenue is packaged into a license fee, which compensates a company for its investments in developing the system, supports future development and related services. The usual arrangement for commercial systems also involves an annual fee for service and support, generally around 15 percent of the initial license fee.

The trend toward software as a service has already disrupted the traditional business model for library software. Rather than a large up-front payment, a software as a service arrangement may be based on annual fees consistent year by year. The SaaS fees include hosting and infrastructure costs that the library otherwise would incur locally.

Businesses involved in open source software earn revenue based on services rather than license fees. Open source software does not require payment of license fees, but involves a different set of costs to an organization implementing the system and different sources of revenue to those responsible for its development. In the case of Kuali OLE, the cost of software development has been born by the Mellon Foundation and the partner organizations.

## IN THIS ISSUE

Open Source Alternatives in Library Systems Procurement  
PAGE 1

Kuali OLE: the Open Source Library Services Platform  
PAGE 2

Any future libraries that implement the software will benefit from that investment. Libraries implementing Kuali OLE, or any other major open source application, will incur other costs, such as local or hosted hardware infrastructure, data migration, technical personnel costs associated with integration with other business and discovery systems, operational costs related to system configuration and profiling, training, and internal support for the library staff and other end users of the system. Libraries will naturally calculate the long term total cost of ownership as they weigh their options between open source and commercially licensed systems.

Many libraries implementing open source automation systems contract with an external organization for support services. Almost all libraries implementing Koha or Evergreen, the other two open source library automation systems commonly used in the US, work with a commercial service provider. These commercial support companies offer a range of services,

including installation, data migration, hosting, help-desk support, and may be able to perform custom development for new features. When working through one of these companies, a library needs no more local technical expertise than would be needed with a proprietary-licensed system.

The concept of open source software resonates with many libraries. Yet, they also require systems that are well suited to their strategic priorities and operational requirements. Open source software for libraries has reached a mature state. I see procurement processes increasingly shaped to allow for products based on either open source or proprietary software licenses. But overall systems will be selected on the basis of their functional capabilities, cost, and value relative to budget expectations, the level of support available, and in the confidence in the future development of the system. I see the type of license as a deciding factor only once the products are reasonably close in features and value.

## Kuali OLE: the Open Source Library Services Platform

The last few years have seen a new cycle of development of library services platforms, a new generation of systems with a broader scope of functionality and different technical characteristics than the integrated library systems that previously dominated. Currently available products in this category are Ex Libris Alma and Sierra from Innovative Interfaces. Others remain in development, such as Serials Solutions Intota and Open Skies from VTLS. In addition to these commercial offerings, the open source Kuali OLE project is progressing toward the creation of a library services platform. Kuali OLE has been designed specifically for academic and research libraries through multiple project phases, partially supported through major grants from the Andrew W. Mellon Foundation, and under the governance of the Kuali Foundation, which also supports other major software applications for higher education and research organizations.

Information for this article was gathered from a variety of sources, including a telephone interview with Robert H. McDonald, Director of Kuali OLE Community Development and Associate Dean for Libraries and Deputy Director Data to Insight Center at Indiana University Bloomington and Mike Winkler, Technical Consultant for Kuali OLE and Director, Information Technology and Digital Development at the University of Pennsylvania, press releases, e-mail correspondence with Kuali OLE participants, as well from documents available on the [www.kuali.org/ole](http://www.kuali.org/ole) website and other Kuali project sites.

### Investment and Support

Kuali OLE, initially known as the Open Library Environment, has been able to carry out the work of designing and developing a complex library-specific business application through a combination of grant funding and capital and personnel resources contributed by the partner institutions. The project has been a major collaborative effort among individuals participating from more than a dozen library organizations, including administrators, technologists, and practitioners of almost every aspect of library operations, working closely with a commercial firm contracted to perform programming, architecture design, and other technical and project management tasks.

### Support from the Andrew W. Mellon Foundation

The Andrew W. Mellon Foundation (<http://www.mellon.org/>) has provided funding for each of the multiple phases of the Kuali OLE project. The participating institutions have also committed significant resources, including matching contributions and dedicating personnel and other resources to the project. The overall investment in support of Kuali OLE and related projects, counting the partner institution contributions, totals more than double the \$4.1 million provided through the Mellon Foundation grants.

Many grants awarded by the Mellon Foundation have resulted in software made available through an open source license. In addition to Kualī OLE, the Mellon Foundation has also provided funding to other projects to create technical infrastructure of business applications to support higher education or cultural institutions, including Kualī Financial System (<https://www.kuali.org/kfs>) providing accounting and other functions for educational institutions, Sakai (<http://www.sakaiproject.org/>) learning management system, Collection Space (<http://www.collectionspace.org/>) for the management of museum and archive collections, Archive Space (<http://www.archivespace.org/>), Fluid (<http://fluidproject.org/>) for the creation of user experience components and design, and many other components. CollectionSpace, ArchivesSpace, and Kualī OLE, aim to promote the development of the management of cultural records based on open source tools.

These projects provide some context for Kualī OLE as falling within the Mellon Foundation's involvement in the creation of open source software across a broad range of activities within educational and cultural institutions. Most of the components produced compete with commercially developed products, providing an alternative for institutions interested in working with open source alternatives. This open source approach does not necessarily preclude commercial involvement. Although the software may be used freely, many institutions take advantage of hosting, support, development, integration, and other services offered by commercial organizations.

## Funded Projects

The Kualī OLE project has been underway for more than five years, progressing step by step through a series of projects, each made possible through partial funding from the Mellon Foundation.

### *Open Library Environment*

The planning phase of the project, which received \$475,700 from the Mellon Foundation, began in June 2008. The key activities of this phase included exploring the feasibility of the project, creating an initial design for the functionality and architecture, to proposing a governance model, and to identifying institutions interested in participating in the subsequent effort to create the software. Business process modeling was used to identify the basic workflows. A series of regional workshops were conducted to gain input from a wide range of individuals and institutions. Duke University served as the lead institution, joined by partner institutions including University of Kansas, Lehigh University, the University of Pennsylvania, the National Library of Australia, Library and Archives Canada, Vanderbilt University, the Orbis Cascade Alliance, Rutgers University, the University of Florida,

the University of Chicago, Columbia University, the University of Maryland and Whittier College. Lynne O'Brien, Director for Academic Technology and Instructional Services for Duke University led the group as Principal Investigator. One of the recommendations of this phase was to join the efforts of the Kualī Foundation as the project moved forward.

### *Build Phase (Years 1-2)*

In December 2009 the Mellon Foundation awarded \$2.38 million in support of a two-year build project to finalize the design and create the software envisioned by the Open Library Environment. In this phase, Indiana University took the reins as the lead institution. Other institutions joining this phase of the project included Lehigh University, University of Chicago, University of Maryland, University of Michigan, and the University of Pennsylvania; Duke University and North Carolina State University participated representing Triangle Research Libraries Network; and a consortium of colleges and universities in Florida including University of Florida, Florida International University, Florida State University, New College of Florida, Rollins College, University of Central Florida, University of Miami, University of South Florida, the Florida Center for Library Automation.

Indiana University was well-positioned to lead the effort, with an established track record of involvement with other Kualī projects, including Kualī Financial System, Kualī Student, Kualī People Management, Kualī Coeus, and Kualī Rice. Brad Wheeler, Indiana University's Vice President for Information Technology & Chief Information Officer serves as the Chair of the Kualī Foundation Board of Directors.

Each of the partner organizations contributed funds as well as allocating personnel. Some of the roles filled by partner organizations included OLE Board members, Functional Council representatives, Technical Council representatives, as well as designated Subject Matter Experts. The project also employs dedicated staff and contracts with commercial organizations. Patty Mescher, with previous experience that includes Project Manager of Kualī Financial Manager (2009-2011) was named Kualī OLE Project Manager in July 2012.

Serving as a Kualī OLE partner does not necessarily represent a firm commitment to implement the software in production. Though most of the institutions would not make the extensive investment of capital and personnel resources if they did not intend to implement the software, some may be required to follow procurement processes that might result in other outcomes. Some of the institutions involved are preparing a Request for Proposals, which would include Kualī OLE, probably through a commercial affiliate, as a potential respondent.

This phase of the project, concluded at the end of 2013, focused primarily on creating the functionality needed to manage

a library's physical inventory and to provide functionality needed to replace a traditional integrated library system. The functionality was implemented within an overall design to accommodate workflows associated with all types of media and materials, though the components for managing electronic resources was designated to be completed in another phase.

### *Global Open Knowledge Base*

The vital role of managing electronic resources is addressed in Quali OLE through the Global Open Knowledge base (GOKb) project, an international collaboration with the JISC in the United Kingdom to create an open access knowledge base of electronic resource holdings delivered and managed through an open source platform.

In March 2012 The Mellon Foundation awarded \$499,000 for this one-year project, with North Carolina State University as lead institution. GOKb builds on the JISC Knowledge Base+ project (<http://www.jisc-collections.ac.uk/knowledgebaseplus/>).

The GOKb will complement and in some cases provide an alternative to the knowledge base components of commercial products, such as KnowledgeWorks of Serials Solutions, LinkSource from EBSCO Information Services, and EBSCO LinkSource Integrated Global Knowledge Base. While the knowledge bases of the commercial products are licensed as proprietary content, the underlying data of GOKb can be shared and repurposed. The scope and depth of the commercial knowledgebases exceeds, at least initially, what is planned for GOKb. The commercial products have made large investments in the creation of their knowledgebases— large-scale management and delivery platforms, automated routines for ingesting and normalizing holdings data, and substantial personnel resources. Designed to support the electronic resource management needs of the participating partners, GOKb will manage a fewer number of journals than the commercial products, which must provide for management and link resolution for all titles held among their global customers. As part of the GOKb, around two dozen subject matter experts (SMEs) in the US and UK will be involved in the creation and maintenance of the knowledge base.

GOKb is expected to interoperate with other knowledge bases and linking environments. The scope of functionality for Quali OLE does not include that of link resolution, just as it does not provide patron discovery service. Libraries using Quali OLE would continue to use other link resolvers, with GOKb available to provide the needed knowledge base support.

### *Build Phase (Year 3)*

Work toward the completion of Quali OLE continues in a third year of development, with the Mellon Foundation making an

additional award in December 2012 of \$750,000, with matching funds provided by the partner institutions.

This phase of the project aims to deliver Version 1.0 of the software in October 2013 and Version 1.5 in February 2014.

## **Partner Institutions**

The institutions currently working together on Quali OLE represent a variety of academic libraries, though most are fairly large and complex, bringing different integrated library systems, approaches to discovery, and implementation plans.

### *Indiana University*

The lead institution for the build phase projects, Indiana University system has operated a SirsiDynix Symphony ILS since 2001 and has developed a discovery service based on Blacklight. This discovery environment was recently deployed to interoperate with Symphony beginning in the summer of 2013 and will operate with Quali OLE once it is implemented.

### *Duke University*

Duke University currently relies on Ex Libris Aleph as its ILS, has licensed Summon from Serials Solutions for article-level discovery, with an online catalog based on technology from Endeca. Deborah Jakubs, Duke University's University Librarian and Vice Provost for Library Affairs serves as Co-Chair of the Quali OLE Board of Directors.

### *Lehigh University*

Lehigh University, with an enrollment of under 5,000 undergraduates and 2,200 graduate students, is one of the smaller institutions involved in Quali OLE. With flexibility brought by smaller size, it will be among the earliest adopters of the Quali OLE software, expected in summer of 2014. Lehigh is currently developing VuFind as the discovery layer for SirsiDynix Symphony, their current ILS, and for Quali OLE when it is placed into production.

### *North Carolina State University*

North Carolina State University was not a participant in the initial planning grant project, but joined in the build phase, representing the Triangle Research Libraries Network along with Duke University. NCSU currently uses SirsiDynix Symphony as its ILS, has licensed Summon from Serials Solutions, and participates in the Endeca-based catalog developed for the TRLN. Building on its experience of having created its own E-Matrix electronic resource management system, NCSU serves as the lead institution for the GOKb project.

### *University of Chicago*

Though large and complex, with collections totaling more than 10.7 million volumes, the University of Chicago is slated to become one of the early adopters of Kuali OLE with a planned production implementation in the summer of 2014. The University of Chicago has used Horizon since 1995 and also makes use of Millennium from Innovative Interfaces for acquisitions and licenses EBSCO Discovery Service for article-level discovery. The library was a development partner for Corinthian, the new generation automation system that Dynix Corporation was developing prior to its acquisition by Sirsi Corporation and was involved in beta testing for academic functionality for Horizon. The library's current discovery environment is based on AquaBrowser and is working on implementing VuFind, targeted for implementation in front of Horizon in January 2014 and to remain in place through the shift to Kuali OLE.

### *University of Florida*

A variety of institutions associated with the University of Florida system participate in Kuali OLE, representing the needs that a consortium that differ from individual library systems. Participants include Florida International University, Florida State University, New College of Florida, Rollins College, University of Central Florida, University of Miami, University of South Florida, the Florida Center for Library Automation.

The State University System of Florida has recently seen major organizational changes, with a consolidation of the state university system. Previously, the Florida Center for Library Automation managed an instance of Aleph for each campus; the College Center for Library Automation managed a shared Aleph system for the state's community colleges. The new organization, Florida Virtual Campus, is expected to implement a single system to support all the libraries involved, with a combined student population of more than 1.2 million.

### *University of Maryland*

Involved in Kuali OLE since the initial planning grant, the University of Maryland currently participates in an implementation of the Ex Libris Aleph ILS hosted by the University of Maryland, College Park and shared by 16 institutions participating in the University System of Maryland and Affiliated Institutions. A variety of scenarios are still under consideration for the implementation of Kuali OLE.

### *University of Michigan*

The University of Michigan joined the Kuali OLE partnership beginning with the first build project. The university has been

using the Ex Libris Aleph ILS since 2002 and has developed a discovery environment based on VuFind and has licensed Summon from Serials Solution for article-level indexing. The University of Michigan Libraries are an investment partner for Kuali OLE but have no current plans for implementation.

### *University of Pennsylvania*

The University of Pennsylvania has been involved with Kuali OLE since the initial planning grant. IT currently uses Ex Libris Voyager as its ILS. The library has recently developed its own discovery interface, which it calls Franklin, based on the Apache SOLR toolkit, but not based on either Blacklight or VuFind. This new discovery environment was implemented in July 2013 to replace the native WebVoyage online catalog and will also be used with Kuali OLE when it is implemented to replace Voyager.

### *Villanova University*

Villanova University joined the Kuali OLE partnership in June 2012, subsequent to the beginning of the build project. Villanova University Libraries have been a strong proponent of open source software in libraries. The VuFind discovery software was initially developed at Villanova University, releasing in July 2007, and the library continues to support its development. Villanova University currently uses Voyager from Ex Libris as its ILS and licenses Summon for article-level results, which are presented through VuFind.

### *LMS Project, the University of London Library Systems Association*

Interest in Kuali OLE has spread beyond the initial group of partner institutions and has attracted international interest. International involvement is seen both through the collaboration with JISC to create GOKb, but also through the planned implementation of the software by a consortium with the University of London libraries.

Bloomsbury Library Management System project has committed in principal to adopting Kuali OLE. A number of colleges and institutes are affiliated with the University of London, some of which operate their own library automation systems and others involved in shared system. The Bloomsbury LMS Project does not encompass all of the libraries of the University of London.

The Bloomsbury project will begin working with the Kuali OLE Version 1.0 software in as October 2013. They are also developing a discovery interface based on VuFind to unify the libraries in the consortium.

## **Functionality and Modules**

The functionality of Kuali OLE was designed through the process

of business process modeling, examining the workflows currently needed by libraries, independent of that built into the traditional integrated library systems. The modules of Kuali OLE include Deliver, Describe, Manage, Select, and Acquire.

### *Discovery*

The initial Open Library Environment project decided that the project would focus on functionality to support library operations and would not produce a patron-facing catalog or discovery interface. Libraries can choose from a variety of commercial and open source options for discovery. The Mellon Foundation had previously invested in discovery technology through the eXtensible Catalog project led by the University of Rochester (<http://www.extensiblecatalog.org/>). Other open source discovery applications include VuFind, created at Villanova University, and Blacklight, initially developed at the University of Virginia. Commercially licensed discovery products include WorldCat Local from OCLC, Primo and Primo Central from Ex Libris, Summon from ProQuest, and EBSCO Discovery Service.

### *Requirements for Consortia*

A group of separate libraries or library systems sharing an automation environment bring a different set of demands beyond that of a single organization. A system shared among members of consortium must provide the benefits and savings of a common system and also preserve branding and policies of the individual organizations and accommodate many different possibilities for how patron or bibliographic databases might be managed. Kuali OLE includes several consortia within the partnership, including the University of Florida, the University of Maryland, Indiana University, and most recently the Bloomsbury project. Work is underway, during the third-year build phase, to identify and specify functionality needed to support consortia that may be different than what has already been defined.

## **Kuali OLE Commercial Affiliates**

### *HTC Global Services*

The development strategy for the build phases of Kuali OLE was based on working with a commercial firm for architecture, software engineering, project management, and other services. HTC Global Services, with facilities in Troy, Michigan and in Chennai and Hyderabad, in India, was selected as the primary commercial affiliate for Kuali OLE, beginning in January 2011. HTC had previous involvement with Kuali projects and other large-scale enterprise applications and could offer lower costs through a combination of domestic and off-shore personnel.

### *EBSCO Information Services*

EBSCO became a Kuali Commercial Affiliate in June 2013, primarily with an interest in supporting integration of EBSCO Discovery Service with Kuali OLE. Possible integration options would include using EBSCO Discovery Service as the primary patron interface or to integrate the EDS index for article-level discovery through another interface such as VuFind or Blacklight. In support of Kuali OLE, EBSCO has joined the Kuali Foundation and will provide development resources for the integration between EDS and Kuali OLE and related components.

Currently EBSCO stands as the only index-based discovery service provider with a formal relationship with Kuali OLE. EBSCO has also entered into partnerships to integrate EBSCO Discovery Service into the online catalog or discovery products of many of the major ILS vendors, including SirsiDynix, Innovative Interfaces, EOS International, and Soutron Global.

## **Development Processes**

The development of the Kuali OLE takes place through a collaborative process among the partner institutions and HTC as the primary commercial affiliate. A total of seven teams, each composed of 5-8 individuals, work on product specifications, systems architecture, integration, and implementation process. Some of the analyst and subject matter experts in the partner libraries work full-time on Kuali OLE, while others perform these roles in addition to their other responsibilities.

Software development consists of an iterative process that flows through a cycle of specification writing, to programming, to quality assurance and testing. Subject matter experts in partner libraries write detailed functional specifications. These specifications are submitted HTC managers, who review and refine the specifications, then assign them to programmers for coding. Responsibility then turns to quality assurance, which creates the specifications needed to fully test each unit of functionality. A dedicated quality assurance manager is part of the core Kuali OLE group. The number of programmers HTC Global allocates to Kuali OLE has steadily increased to the current 23 FTE.

## **Architecture**

One of the foundational characteristics of Kuali OLE is adherence to the services-oriented architecture. This approach allows the creation small units of functionality, which combine into higher-level workflows. Any given service can be reused in many different ways, resulting in considerable savings in programming effort. Kuali OLE is not unique in its adherence to

service-oriented architecture—it is the preferred technological approach for modern business applications.

Kuali OLE makes use of the Kuali Rice (<https://www.kuali.org/rice>) service-oriented middleware which provides a variety of lower-level functions required by business applications. Kuali Rice includes modules related to identity management, workflow, notifications, and many other technical tasks. Through the use of Kuali Rice, application developers can focus on the creation of business logic and functionality without having to build lower-level supporting infrastructure. Most Kuali projects make use of Kuali Rice.

Designed for the use of by a single library system or consortium, Kuali OLE was not created to be deployed through multi-tenant software as a service environment, where the same code base is shared among all the organizations using the application. Examples of multi-tenant library applications, where all the libraries share the same cloud-based instance of the software, include OCLC's WorldShare Management Services or Ex Libris Alma.

Each of the Kuali OLE Partners will implement the software on its own hardware configuration, either installed locally on discrete hardware components, or provisioned through an infrastructure as a service provider. Some higher education institutions maintain private cloud technology environments, providing virtualized computing resources similar to that of Amazon Web Services or other infrastructure providers. Kuali OLE has been designed to operate in any of these environments.

### *Load and Stress Testing*

The specific level of hardware support needed for a Kuali OLE installation has not yet been determined. As with any application, the sizing of the hardware will be proportional to the volume of the data to be managed and to peak transaction loads anticipated. With the completion of installable software less than a year away, work has begun to develop specifications both for the amount of time required to load data into the system and to benchmark the transaction loads the software can handle with different hardware configurations. Some testing can be done with the just-released Version 0.8, but concerted efforts will be applied to the production releases slated for next year.

### **Software Release Schedule**

As the Kuali OLE software comes closer to completion, each version comes closer to providing the functionality first to replace the traditional ILS and next to fulfill its fundamental concept of addressing the broader scope of managing both print and electronic resources.

#### *Version 0.8 June 2013*

Not yet considered ready for production use, this release was the first to be made available to each of the partner institutions to download and test with data. Previous versions created the core infrastructure components, bringing in components such as the Document Store, the Kuali Financial System subset for to support financial transactions and other core technologies. Key areas of new functionality in this version include Select and Acquire Module, providing workflows for the selection and acquisition of physical items; the Describe module, addressing metadata management and workflows for cataloguing; and the Deliver module, which provides workflows related to the circulation of materials. This version also includes Implementation Tools for integration with discovery systems and utilities to migrate data into the system.

#### *Version 1.0: Q4 2013*

Version 1.0 slated for release in the fall of 2013 brings together most of the functionality needed for the management of physical collections, filling out the modules of Select & Acquire, Deliver, and Describe with features equivalent to an ILS. This release will also provide a more complete set of implementation tools needed to position a library to begin testing migration processes and to prepare for migration. No libraries are planning to put this release into production.

#### *Version 1.5: Q1 2014*

This version, planned for February 2014, will be the first to include integration with GOKb and its functionality related to the management of electronic resources. This version will be the first that can be implemented as a full replacement for an ILS and will be the version that early adopters such as the University of Chicago and Lehigh University plan to implement in the summer of 2014.

### **Looking Forward**

The early implementation of Kuali OLE in June 2014 will come two full years after that of Ex Libris Alma. Sierra has been in production in libraries since April 2012, and Innovative Interfaces recently reported that 450 library systems representing more than 1,400 individual library facilities have contracted to implement Sierra. Intota, the library services platform from Serials Solutions remains under development, with a similar timeframe for implementation to Kuali OLE. It appears that many academic libraries are ready to move off their legacy ILS and adopt one of the library services platforms currently available. Others may be willing to wait until the full slate of options is available.



Smart Libraries Newsletter  
American Library Association  
50 East Huron Street  
Chicago, IL 60611-2795 USA  
Address Service Requested

---

NON PROFIT  
US POSTAGE  
PAID  
PERMIT 4  
HANOVER, PA

---

## September 2013 Open Source Alternatives in Library Systems Procurement

### *Smart Libraries Newsletter*

Marshall Breeding's expert coverage of the library automation industry.

---

#### **Editor**

Marshall Breeding  
615-343-6094  
marshall@breeding.com

#### **Managing Editor**

Patrick Hogan  
312-280-3240  
phogan@ala.org

**Digital Access for Subscribers**  
alatechsource.metapress.com

### **TO SUBSCRIBE**

To reserve your subscription, contact the Customer Service Center at 800-545-2433, press 5 for assistance, or visit [alatechsource.org](http://alatechsource.org).

The 2013 subscription price is \$85 in the United States and \$95 internationally.

ALA Techsource purchases fund advocacy, awareness, and accreditation programs for library professionals worldwide.

Production and design by the American Library Association  
Production Technology Unit.

*Smart Libraries Newsletter* is published monthly by ALA TechSource, a publishing imprint of the American Library Association.

[alatechsource.org](http://alatechsource.org)

Copyright © American Library Association 2013. All rights reserved.