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TOPIC: FUTURE OF LIBRARY SYSTEMS

THE FUTURE OF LIBRARY SYSTEMS:
LIBRARY SERVICES PLATFORMS

ALMA AT PURDUE

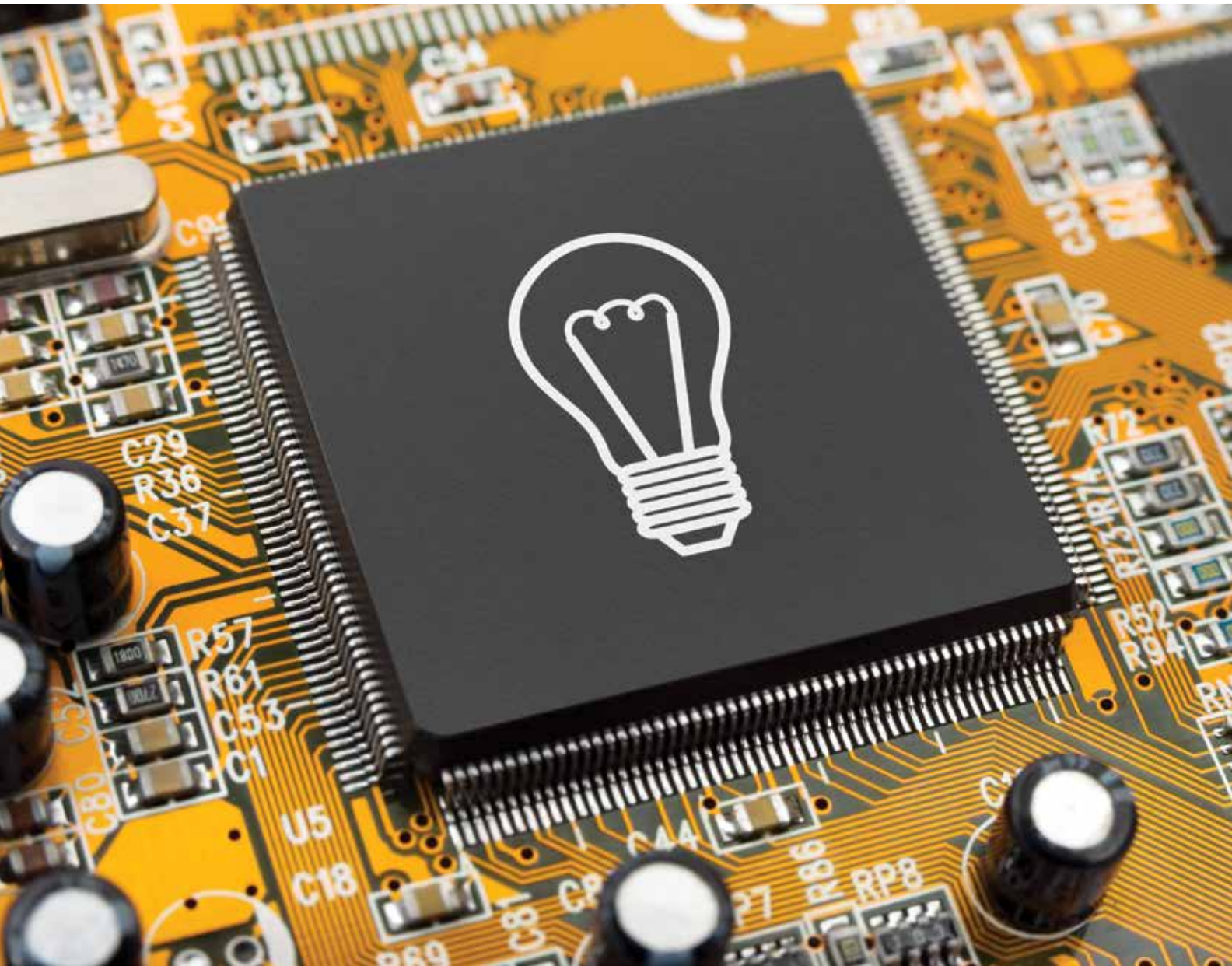
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THE FUTURE OF LIBRARY SYSTEMS: LIBRARY SERVICES PLATFORMS



CARL GRANT

Many libraries are in the process of rethinking the effectiveness of the automation tools they're using to provide library services, both within and outside of their library buildings. Internally, the core component driving many of these services has been the integrated library system (ILS). The next generation of these systems are called "library services platforms," a term coined by the consultant Marshall Breeding.

The organizations developing and providing these products use a variety of descriptions: "webscale management solutions," "uniform management systems," or just "services platform." The vendors and products that have been announced include: WorldShare™ Management Services by OCLC®, Alma by Ex Libris, Sierra by Innovative Interfaces, Intota™ by Serials Solutions®, Open Library Environment (OLE) by Kuali®, and Open Skies by VTLS.

The primary difference between the traditional ILS offerings and the new library services platform is that the ILS products were largely designed around the management of print collections. As libraries have moved increasingly to accommodate digital collections, they've found the ILS products unable to be reconfigured well enough to smoothly and efficiently handle the integration of all the workflows that are different, yet necessary, for both print and digital. In addition, the older ILS do not take advantage of the latest offerings in computing technologies and architectures, particularly in the area of cloud computing.

When looking at the new library services platforms, we're seeing some radically different approaches being taken and, as with all technologies, each approach has its advantages and disadvantages. However, to understand those approaches, we need to start with some common definitions upon which to make comparisons at the technical level. Then we'll look at each of the new library service platforms. Finally, we'll consider a high-level view in order to understand what the approaches mean at a professional level.

DEFINITIONS

For the purposes of this article, the following definitions are used:

- **SaaS** – This stands for Software as a Service and really should be viewed primarily as a different way of delivering software. When using SaaS, you're using a remotely hosted machine instead of a locally installed machine and the company hosting the machine takes on the responsibility for maintaining the system, so library staff is freed from this set of tasks.
- **Cloud Computing** – There is actually an agreed upon set of characteristics from the National Institute of Standards and Technology that defines a cloud computing system as having:
 - » On-demand self-service
 - » Broad network access
 - » Resource pooling
 - » Rapid elasticity
 - » Measured service



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Of course, those characteristics seem better suited to evaluating consumer-facing applications. Since libraries are organizations that sit in-between the cloud service and the end user, applying these characteristics can be done with some discretion. A better filter might be for librarians to perform an analysis by looking for the following cloud computing features:

- » **Multi-tenant software** – This is frequently one of the most misunderstood concepts of cloud computing. A “light” definition from WhatIs.Com, states (the emphasis is mine):

*Multi-tenancy is an architecture in which a **single instance of a software application serves multiple customers**. Each customer is called a tenant. Tenants may be given the ability to customize some parts of the application, such as color of the user interface (UI) or business rules, but they cannot customize the application’s code. Multi-tenancy can be economical because software development and maintenance costs are shared. It can be contrasted with single-tenancy, an architecture in which each customer has their own software instance and may be given access to code. **With a multi-tenancy architecture, the provider only has to make updates once. With a single-tenancy architecture, the provider has to touch multiple instances of the software in order to make updates.***

This has important implications for libraries since it means your supplier should be able to run a far more efficient operation, i.e., it will likely take less computer resources than systems running in a SaaS architecture. That should ultimately translate into lower costs to your library for using this type of technology. As mentioned above, another reason that costs should be lower is

that if a supplier is supporting all of their customers (and for a working number, let’s say 500) from this one software instance, when they upgrade that instance of the software to the latest version, all 500 customers are upgraded at the same time. If a supplier is using one instance of the software per customer, even if hosted in a SaaS architecture, then they have to upgrade each instance individually. Obviously this creates overhead and delays.

- » **Security certifications** – Without a secure cloud computing or SaaS system, you’re potentially increasing the exposure of your library to all kinds of risks. As a result, when procuring a new cloud computing or SaaS library management system, you, and your legal and procurement people, should make sure the supplier meets some certified standard of security. Note, however, that most certifications only apply to the data center and only to a specific location. So these security certifications may not provide any assurance that data leaving the data center and traversing the larger Web are being transferred in an encrypted, secure manner. Again, this is something you should check separately and as part of a procurement process. There are two particular standards that relate to such security:
 - **ISO/IEC 27001** – This standard is focused on requirements for information security management systems, thus it is the most appropriate for addressing your security concerns. The Wikipedia entry on this standard says in part: “ISO/IEC 27001 requires that management: systematically examine the organization’s information security risks, taking account of the threats, vulnerabilities, and impacts; design and implement a coherent and comprehensive suite of information security controls and/or other forms of risk treatment (such as risk avoidance or risk transfer) to address those risks that are deemed unacceptable; and adopt an overarching management process to ensure that the information security controls continue to meet the organization’s information security needs on an ongoing basis.” Compliance can be audited by companies that specialize in this type of work. You can request to see a copy of the certification (although do not expect to see a copy of the detailed assessment as this very request would compromise the security of the system). Remember that the certification should be for the particular data center where your data will be hosted because it is location specific.

- SAS 70/SSAE 16** – The SAS 70 auditing standard for service organizations, written in 1992, was originally designed for examination of a service organization's controls and processes. The SAS 70 website states that certification to this standard "represents that a service organization has been through an in-depth audit of their control objectives and control activities, which often include controls over information technology and related processes." SAS 70 has now been superseded by SSAE 16; however, you might encounter either of these when asking for a security certification. The newer SSAE 16 dates from 2010 and while it may not be thought to be applicable upon first examination, in fact, just like SAS 70, it too examines controls applicable to service organizations and even has a related report, Service Organization Controls (SOC 1), that is applicable to organizations providing computing services.

LIBRARY SERVICES PLATFORMS – THE APPROACHES

There are three major approaches being taken by the organizations that are building the new library services platforms. To categorize those, let's borrow some familiar phrases:

SOMETIMES YOU JUST HAVE TO START OVER

Systems that follow this approach include WorldShare Management Services by OCLC, Alma by Ex Libris, and Intota by Serials Solutions.

The shared view of these organizations incorporates a line of thinking that says the amount of change we've seen, both in computer technology and in library management/operations, is so substantial that the best way to accommodate the change is to start with a fresh design that can take advantage of all of these changes. As a result, these systems build upon the advances in architecture that allow for multi-tenant operations, data aggregation, analytics, and redundant and secure data centers. In addition, the workflows take an integrated and efficient approach by doing a redesign that incorporates both digital and print processes into common workflows to optimize staff efficiency and effectiveness. These are all positive features of the new systems. The negative aspect of this approach is that some functionality may be lacking in early releases of the product. Whether this approach is for you really depends on your library's needs and where the development organization is focusing first.

For most system vendors, there is a real danger in trying to develop an entirely new product and at the same time address a very broad market. Since these are enormously complex products, as most of us know, there is huge potential for creating disappointment for early adopters. Existing ILS products, while containing limitations in serving today's digital environment, represent hundreds of person-years of development, testing, and documentation. You simply can't replicate all this functionality in a new software architecture in a short period of time, even with agile development techniques, more efficient programming languages, automated testing, and large development teams. As we've seen happen with other products in other fields, this approach simply stretches the developer resources too thin, across too many demands, and doesn't produce enough quality or progress to keep everyone happy at the same time.

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Another way for a system vendor to build a totally new product is to focus on certain types of customers and their specific requirements. As the new product successfully meets the narrower target audience's needs, the developer can then branch out to address other types of libraries. Look for organizations that are taking this approach if you're going to be an early adopter of a new system.

2 DON'T THROW THE BABY OUT WITH THE BATH WATER

System vendors that follow this approach re-utilize a substantial portion of their previous generation of technology and couple it with new technology in various ways to bring new services and capabilities to end users. Realizing the difficulty inherent in recreating products from the ground up, these vendors take the approach that change in libraries will be more evolutionary than revolutionary and that redesigning workflows doesn't supply enough gains to offset the costs. Products taking this approach include Innovative's Sierra and VTLS's Open Skies.

For libraries, there is some sound logic to this approach. Many libraries understand they are currently in a situation where their primary focus needs to be on meeting end user or library member needs. They have to do this by moving quickly and showing real, substantial progress, at a reasonable cost and without breaking everything that works. If this is successful, the library is more assured of seeing improved funding and support in its community of users. So, given limited financial and staff resources, many libraries have to make a choice about where they will focus their resources in the short term—i.e., on the back-room efficiencies, or on user-facing service improvements, many of the latter which depend only partially on the library automation system. While there is no disagreement that improving the back-room efficiencies will also improve many user-facing services, the short-term net gain may not equal the cost of conversion to a new system and/or the reengineering of all those back-room processes right now. Consequently, many libraries decide to defer those improvements until later.

The downside of this approach is that systems that have not been re-written utilizing true multi-tenant architecture will likely take longer for new versions of the software to be installed if you're hosted (because these systems need to update each implementation separately) or if you're not using the SaaS hosting option, you will bear the cost of paying your staff to do the version upgrades.

Ultimately, because this evolutionary approach doesn't optimize the efficiency of the hardware upon which the software is running, it will keep the routine costs of running the hardware/software higher than those providers utilizing the newer, multi-tenant cloud computing architecture. Thus it

will keep the ongoing vendor costs higher. It also means the vendor will be in the situation of having to support multiple versions of the software, another cost that ultimately the customers must bear and one which those providers offering a true cloud computing solution will avoid.

With regard to the software, the evolutionary approach does not provide the more integrated and streamlined workflows of the totally rewritten and reengineered products and thus may not be the best choice for those libraries that are rapidly moving towards adding support for digital collections. If your provider doesn't offer the new integrated workflows, your library could miss out on the advantage of taking existing people and financial resources and reallocating them to new user-facing services. Again, this may not matter to your library at this point in time. It is up to you to make a determination if the work and cost of converting to the newer, more efficient systems is worth the efficiencies you'll gain. Almost certainly, in the long run, it would be. However, many libraries need to deal with the short term first, and there the picture is not always as clear.

3 WE ARE OPEN

Open source software approaches have been gathering momentum in the library software marketplace for some time. Obviously, the task of building an open source library management platform is a herculean task, one of massive complexity. The library marketplace is already supporting both the Evergreen and Koha open source ILS products and whether or not it can also support an effort to develop an open source library services platform is yet to be seen. However, the Kuali organization, backed by Mellon Foundation grant money is trying to do so via an offering called OLE (Open Library Environment).

While the open source approach is important to note, one might expect that the product could also be slotted in one of the other two approaches described above. In fact, OLE carves a path somewhere between the two as we will see below.



ANALYSIS OF THE LIBRARY SERVICES PLATFORMS

Now, with these approaches in mind, let's analyze each of the available new platforms more closely.



Sierra by Innovative Interfaces

Innovative takes an approach for their library services platform of largely repackaging their previous product, Millennium, and modifying

it to run on a new open source database (PostgreSQL), using a new open source indexing engine (Lucene), adding new open APIs, opening up some of the existing APIs, updating the interface, and adding new, functional modules. The totality of this package is called Sierra and it can be had as either software-as-a-service (SaaS) or a local install.

For libraries that decide to focus on meeting end user or member needs and defer reengineering back-end processes until later, Sierra will prove to be an entirely viable option. Libraries wanting to move to a hosted environment will be able to do so. (Innovative has long offered hosting for many of their products, including Millennium.) The product is available right now and offers a total range of library functionality, although workflows may not be as configurable as some competitors' offerings.

Innovative describes Sierra as an "open development" platform and is taking some very positive steps in this direction. Sierra clearly provides customers with access to more of the system APIs and Innovative is promising to deliver new APIs that will give access to additional data and services. (Librarians should request a detailed list of both the released and planned-for release APIs as part of their evaluation.) The Sierra literature talks about a developer community, coming soon, to be called the "Sierra Developers Connection." Sierra does offer some excellent reporting tools, a feature that has long been a plus for the Innovative Millennium product. These new tools include a new "Reporter" module that allows users to select fields and compose complex reports with relative ease (although some training is required). The data used to drive this module is copied nightly and includes the "core" ILS data. Another new tool is the "Decision Center," a tool for use by staff, typically the manager of collections. It appears to primarily use canned reports, but they can be run dynamically for instant use and analysis.

These reporting tools are offered primarily for use with data from the library or consortium using or sharing a Sierra implementation. Aggregation beyond this (such as would be required to compare your library to peer institutions across the country) involves additional steps to upload the data to Innovative's Data Center and to run the reports there.



OLE by Kuali

This is the only open source software solution being offered among the new library services platforms. Backed by Kuali, development partners, and Mellon Foundation

grant monies, a number of academic and research libraries have banded together to build, own, and govern this offering. The stated values of OLE membership include the ability to drive the product to meet the needs of member institutions, the ownership of the software as a long-term investment, and the ability to meet the enterprise needs of a research library that will also work for librarians in a consortial environment. The stated goal of the OLE project is to build a flexible, service oriented, enterprise library management system for academic and research libraries. As such, the product is a ground-up build of a new offering, but one that uses, where possible, some of the other Kuali open source software components. Currently the available functionality includes acquisitions, record loading, accounts receivable, and basic reports. Planned for future release are circulation, cataloging, inventory, financial processing, and ERM components. The product—designed to support the range and formats of scholarly information—interoperates and integrates with other systems while providing workflow configuration capabilities.

OLE is a SaaS offering, not a true cloud computing system and institutions using the product must select their own hosting service. Note this may change, however, as commercial partners sign on. Data sharing across system installations is done using the open linked data model.

OLE, like many of the new library services platforms, is at a very early development stage. Therefore, some features like interface design have not yet been addressed with any level of sophistication. OLE has hired an interface designer so this issue should be addressed in future releases. While OLE presentations are currently focusing on the open source benefits, rates of adoption and implementation will not likely increase until librarians can readily see how the product will solve today's problems and reduce expenses. At a high level, OLE, when compared to true cloud computing solutions, may not fully address issues such as data aggregation and analytics, multi-tenant architecture, and data center security/redundancy.

It is also not yet clear if OLE can acquire enough support among academic and research libraries to sustain itself over the long term. While the promise of OLE is strong, in comparison to competing library services platforms OLE remains focused on technical underpinnings and building support while other offerings are focused on showing functionality, well designed interfaces, and working examples of modifiable

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workflows. Nonetheless, over 70 libraries are current Kuali members and from the perspective of building a collaborative and community system, open and available to all, OLE has no peer among today's library service platform offerings.



Intota by Serials Solutions

Intota is a totally new product, written from the ground up, and is a true cloud computing solution. It is said to offer true multi-tenant software operations, shared data capabilities, and to fully support a powerful analytic and analysis engine. Plans also exist for multiple data centers, including international locations, within the next year. Intota is the latest entrant in the market for the revolutionary approach to a library services platform, so functionality is accordingly smaller at this point in time. The advantage of being the latest, though, is that what is being shown features some creative thinking and well thought-out integration of the workflows and processes that occur in the backrooms of all libraries.

Intota's development is based on the premise that libraries are managing today's collection with yesterday's tools and that with the changing nature of the collection users want to be self-sufficient. Intota focuses on workflows, system maintenance, and assessment, the latter emphasis to aid libraries in showcasing their value. Overall, Intota is a total reconceptualization of library management systems providing functionality focused on selection, acquisitions, description (cataloging), fulfillment, a knowledgebase, and discovery.

It would also appear, based on Serials Solutions' selection of development partners, that Intota is a product designed to have broad appeal across all types and sizes of libraries. This carries some risks in the early stages of the product's life, so librarians should carefully analyze their needs and understand when those needs will be addressed on the development timeline before committing to production use.

As for the openness of Intota, the company is promising a suite of documented, open APIs. Historically, Serials Solutions has been doing this with their other products for quite some time, so there is every reason to expect this trend will continue.

One of the real advantages of Intota is that it represents a total approach from end user discovery to the library's backroom. As a result, it offers tightly integrated processes, efficient and effective workflows, and data handling for both the print and digital environment. It will allow librarians to smash through the silos that existed in previous library automation systems.

Another important area where Intota is showing promise is analytics. At least in discussions, Serials Solutions is placing a major focus on assessment and analytics. Analytics are becoming more important because they allow the library to use data to understand the users in far greater detail and to predict, with higher accuracy, what types of services and content they'll need and when. This should be very appealing to librarians and will offer major steps forward in the profession in terms of being able to offer new, proactive services to users.

As for availability, while Serials Solutions is currently signing up and working with test partners for Intota, the product is not expected to be completed until late 2013, while many of the competing offerings are already largely complete and being installed.

At this point, the data center locations and security level certification(s) are unknown and thus customers need to closely analyze the security criteria discussed above during the procurement phase.



Alma by Ex Libris

Alma is also an entirely new, true cloud computing product. The overall approach of Ex Libris is to provide libraries with comprehensive, unified

resource management. In doing this, their intent is to avoid the duplication of effort and data required in maintaining separate ILS, ERM, institutional repository, discovery, and link resolution products. The goal is for library staff to be able to work in one environment.

Because Ex Libris traditionally addresses a narrower segment of the library marketplace (academic, research, national, and corporate libraries being their target market), one of the advantages they've had is that despite developing an entirely new product, they've also developed more depth of functionality than competing library services platforms. That functionality includes: selection (acquisitions and demand-driven acquisitions), print management (circulation, reserves, ILL), electronic management (licensing, usage tracking), digital asset management (repository functions), metadata management (cataloging, collaborative metadata management), and link resolution (OpenURL). This product should move libraries from "just-in-case" to "just-in-time" collection development models. The product also features configurable workflows using a management tool that allows tasks to be assigned to staff. Due to the configurability of workflows, libraries can largely retain existing workflows and then re-engineer them as time permits. Of course, it must also be noted that while much functionality exists at this point, there is some functionality still missing. This includes support for consortia capabilities, which will not be released until 2013. Also planned, but not yet release is support for EAD and MODS.

One of the new features offered as part of Alma is the "Community Catalog" used for the sharing/storage of metadata between libraries. Data in the Community Catalog uses the PDDL open data license. Among the data currently loaded are records from: CONSER, the Library of Congress, the British Library, and various journal metadata records.

Ex Libris has laid the groundwork for a full implementation of cloud computing by placing data centers in the United States, the United Kingdom, and Australia. All of their data centers are independently SAS 70 certified. There is no planned capability to support local installations of Alma.

As a true cloud computing solution, Alma will be able to provide analytics based on shared data (provided customers agree) using Oracle's analytic tools. The result is that libraries should have comprehensive analytics across all their assets and users (and potentially across all libraries using the "Collaborative Business Intelligence" tools). As noted above, such analytics will allow libraries to better understand and anticipate usage patterns. Together, these capabilities should offer customers some powerful user-focused services in the future.

Ex Libris is another company that has long offered open APIs with their products. Plans for Alma include open APIs and support for SOA (Service Oriented Architecture). The company has long offered support for customers doing open source software extensions to their products via the EL Commons website. The site includes both a Wiki and a code-sharing facility to encourage customers to share code, documentation, and presentations about code extensions they have developed. There are separate sections offered for each of their major products.

Because of the focus on depth of functionality rather than breadth of market, Alma appears to offer the richest level of functionality available in the new cloud computing library services platforms at this time.



WorldShare Management Services (WMS) by OCLC

WorldShare Management Services (WMS) is a fresh start, a totally new product that rethinks and recreates management software for libraries

and offers a true cloud computing solution. Built by OCLC, it has the potential to benefit enormously from the "common good" and collaboration that OCLC represents. The philosophy underlying WMS is that libraries are more alike than different and that commonalities in management, workflows, and service are as similar as library collections, clients, and services. Yet, at the same time, OCLC understands WMS must support unique needs and must adhere to principles of vendor neutrality, wherever possible.

WMS is being designed for all types and sizes of libraries from those with millions of titles, circulations, and users to those with less than 100 users. The product uses all the data available in WorldCat®, the WorldCat knowledge base, the WorldShare™ vendor information center, the WorldCat Registry™, and other centralized data repositories. This is a huge advantage for libraries.

However, as noted with other systems, one of the consequences of trying to appeal to that many types and sizes of libraries is that the functionality can be thin during the early

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stages of the product lifecycle. Librarians should carefully analyze their needs and understand when those needs will be addressed on the development timeline before committing to production use.

OCLC is offering solid and innovative methodology when it comes to installing the product. The community of early adopters works together during this process and the implementation process becomes a group experience. Libraries hold weekly meetings with their cohorts and discuss their plans, issues, and findings. OCLC has also developed training tutorials and recorded sessions that are available for library staff to use 24/7. Furthermore, live training sessions are available almost weekly at no additional charge to libraries. Overall, this combination appears to be a very strong support system for implementing sites.

In the area of analytics, OCLC has announced plans to collect and use data to drive analytic-based services. Hadoop, an open source software framework from Apache, is being used and is extremely powerful. Hadoop has been the driving force behind many big data projects and the services that could result from its combination with OCLC's data could be quite impressive.

When it comes to openness, WMS seems to be promising on several different levels. OCLC wants their platform seen as one that enables libraries to build on top of it because they understand they can't do everything themselves. So, like many of the other platforms, they're saying WMS will offer a large number of open APIs for integrating with other applications. Unlike other platforms, though, OCLC's approach includes development of a common framework for services (F4S). This strategy is designed to allow OCLC to build consistent APIs, which are intended to translate into external developers being able to consistently develop new extensions. Furthermore, to do this they're using Open Social, a public specification defining a container and a set of common APIs for web-based applications. This will allow library developers an open source method for creating apps, which they can then upload directly into the WMS interface, or use externally in other Open Social Containers. So in addition to APIs, OCLC has built the entire infrastructure for F4S and application processing, an App Gallery, and a management interface that allows users to modify the interface by adding their

own apps. Of all the new platforms, this appears to be one of the most comprehensive approaches.

OCLC has two data centers in the U.S. and one each in Australia, Canada, and Europe. Within the next year, OCLC will be adding a second site in Europe. All of their data centers are certified to meet ISO 27001 and Lloyds Quality Assurance certifications.



Open Skies by VTLS

Open Skies is the very latest entrant into the library services platform. VTLS is taking an approach of repackaging their previous technology while

combining it with other existing VTLS technologies and bundling in new capabilities. As with Innovative Interfaces and Sierra, this approach realizes many libraries are in no hurry to reengineer their backroom processes in light of the possible costs involved, but instead feel that they can get better support by initially focusing on end user-facing improvements. So VTLS has focused on adding support for multimedia, multi-format metadata, mobile devices, and greater interoperability with third-party systems through support for open APIs and SOA. They've added a unified Drupal™ user interface on top of Chamo and other existing products. Through that interface, VTLS can offer data from their VITAL and Virtua systems to end users. Solr (a highly scalable, open source, search and index platform) is also employed in Open Skies. The specific steps involved are the merger of content from Virtua and Vital, the merger of Chamo and Visualizer into a new Chamo Discovery module, the creation of a common metadata management system for Virtua and Vital, and the development of enhanced displays of FRBR and RDA records.

Given this approach, there is no loss of existing functionality with this offering; rather, it is an approach that tries to integrate print and digital content; add streaming media support; allow events and activities to be supported; and provide basic preservation services for digital content, e-book collection management, and extensive support for mobile users.

Open Skies will be available either as a local installation or a SaaS offering. It does not meet the definition of a true cloud computing solution as defined above. Data centers can be provided by VTLS or self-hosted by the customer.

Openness is provided via basic support for linked data as well as open APIs that conform to Chamo structures (but this is not an open public specification).

Open Skies is scheduled to be released in early 2013 and should be demonstrable during ALA Midwinter in Seattle.



SUMMARY COMPARISON OF LIBRARY SERVICES PLATFORMS

KEY: U=Unkown N=No Y=Yes P=Planned I=Included O=Optional L=Limited support of function

PLATFORM	Open Skies	Intota	Alma	WorldShare	Sierra	OLE
VENDOR	VTLS	Serial Solutions	Ex Libris	OCLC	Innovative Interfaces	Kuali
FEATURES						
Multi-tenancy	Y	Y	Y	Y	N	N
SaaS/Cloud	SaaS	Cloud	Cloud	Cloud	SaaS	SaaS
Local installations possible?	Y	U	N	N	Y	Y
SAS 70 or ISO 27001 certified data center?	N	U	Y	Y	N	N
DaaS (shared data service)	N	P	Y	Y	N	L
CUSTOMER TYPES TARGETED (as of 6/2012)						
Public	Y	Y	N	Y	Y	N
Academic	Y	Y	Y	Y	Y	Y
Special	Y	Y	Y	Y	Y	N
National	Y	Y	Y	Y	Y	N
Consortia	Y	Y	Y	Y	Y	N
FUNCTIONALITY						
Selection/Acquisitions	Y	Y	Y	Y	Y	Y
Fulfillment/Circulation	Y	Y	Y	Y	Y	P
Description/Cataloging	Y	Y	Y	Y	Y	P
Discovery	U	O	O	O	O	O
ERM	Y	Y	Y	Y	Y	P
ILL	Y	Y	Y	Y	Y	U
Booking	L	U	P	U	Y	N
Analytics	N	Y	Y	Y	N	N
Reporting	Y	Y	Y	Y	Y	Y
One Interface	Y	Y	Y	P	L	P
Knowledgebase	N	Y	Y	Y	Y	N
Linked Data Support	L	U	L	L	N	N
Open APIs and/or SOA	Y	Y	Y	Y	Y	Y
Event Management	Y	U	N	U	U	N
Mobile Support	Y	U	Y	Y	Y	N
Streaming Video Support	Y	U	Y	U	U	N
Multi-lingual Subject Headings	Y	U	Y	Y	Y	N
FRBR Support	Y	P	L	L	N	N
RDA Support	Y	P	Y	Y	Y	N
Preservation Capabilities	Y	N	Y	N	N	N
E-book Support	Y	U	Y	Y	U	U

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ACTIVELY SHAPING THE NEW LIBRARY SERVICES PLATFORMS

One thing that librarians must think about when moving to any of these new platforms is how to use these new capabilities to leverage the profession in profound and positive ways. To do that, librarians need to focus on the following when selecting and implementing these systems:

1 The mission and values of librarianship have to be embedded in the product. To do this, we first have to agree, at least to some degree, on what our mission should be.

While this is a much-discussed topic in today's environment, for the sake of this article let's use R. David Lankes' (Syracuse University) statement that says: "The mission of librarians is to improve society through facilitating knowledge creation in their communities." That's a great, simple, and inspiring statement, which we can readily use. Increasingly, we need to be sure we find ways to do just that using these new platforms.

2 Defining our future is a task of participation, not representation. If we want to be sure the core mission and values of librarianship are properly designed into the products we use, librarians must be active participants or drivers of the development process. NISO is a great place to do this. Currently work is underway, for example, in the areas of demand driven acquisitions, the new bibliographic framework, SIP and NCIP, ERM and open discovery—the results of which should find their way in future product releases. Get involved in those activities and support them by allocating staff time to work on projects that will affect your library's future systems.

We also need to be involved in demanding and specifying standards covering APIs and the ability to migrate data in/out of cloud-computing environments and at reasonable costs and in reasonable timeframes.

All of these activities can and will play key roles in shaping the new platforms that are being built. The system vendors are actively participating and librarians need to also get involved to ensure that solutions are done in a way that promotes and provides the services libraries and their patrons need.

3 For library services to have value they must offer differentiation. Organizations succeed by carefully analyzing those they serve and taking a broad view to get an understanding of all the places an end user can get his or her needs met. This analysis also makes it possible to understand where our organizations fit and where other organizations are going to do some things better than us. We should stop trying to compete in those areas because it's a waste of our resources.

What we have to decide is: What are our "core" services, i.e., what is it that we do that creates differentiation leading to our being the preferred source of a knowledge/information service for our end users? Those core services are what sustain our organizations and are why our jobs exist. **It is what we do.** Everything else we do, while possibly very important, is a "peripheral" service. They may be related to our core but don't necessarily have to be done by our organizations. We can look at having these peripheral services done outside of our organizations. Cloud computing, for example, can offer a lot of assistance in several key areas.

For us to move forward in doing new things, we have to squeeze and extract from these peripheral services, the money, time, and people resources they currently consume and redirect them towards our core services. The "core" is where we create differentiation and thus ultimately add value for our members and end users.

So, what are some things we could do to be sure these new library services platforms take us where we need to go? Consider these ideas:

- We should provide **knowledge creation platforms, not just knowledge discovery platforms.** This means providing tools to make it easier for the user to take existing knowledge and build new knowledge. How about a process that allows the user to copy text, pictures, videos, or sound recordings into a new work while automatically handling copyright clearance and/or creating the footnotes and bibliography? Or tools that allow us to reach beyond the research and perform a variety of analyses with the data behind that research. Let's enable users to create new works and to seamlessly feed the results of those efforts into the open access processes for review, publication, and further distribution.
- We need to provide **contextual support**—the ability for library members, to easily understand the environment in which existing knowledge was created and the funding sources behind it. We should be able to say, through our technology: "Show me an opposing point of view or show me other critical commentary on this view." We don't want to place our users in a "filter bubble;" we want to place them in a "learning bubble," a place above biases, above unspecified and un-modifiable filtering.
- We also need to pay a lot more attention to the **users' needs and experiences** with our services. This is another area where aggregation of data about users, their lives, and where they are in the continuum of their life can be

used to help us know what they'll need and when they'll need it. Like so many business sectors, we need to use the data about our users and provide analytics that can give our members better, customized, and very pro-active services. If we don't do this, other businesses will emerge to provide it directly to our end users, leaving the library out of the equation. Our future rests in providing unique services that our users want, need, and value.

Finally, one thing that our profession must be concerned about with these new library services platforms is allowing our libraries to become increasingly reliant on any one supplier for a broad range of products, content, and/or services. This is certainly the result that many vendors would like to see with these new platforms.

However, as librarians, we should be sure that we maintain the ability to:

- 1 Quickly move to new solutions as they come forward
- 2 Openly and cleanly integrate the best solutions together
- 3 Avoid being locked into content silos where choices are made for us, instead of by us.

By applying the recommendations above, the profession of librarianship can thrive along with those organizations who serve libraries. We can make sure these new library services platforms are not only a foundation but also an amplification of the mission of librarianship. Then our collective value in the days ahead can be more clearly conveyed and understood and we will truly be serving our customers as well as our profession. | FE | doi:10.3789/isqv24n4.2012.02

(Note of disclosure to readers: While the author has made every attempt to present this article's information without bias, readers should be aware that I've served as the President of Ex Libris North America, a VP at Innovative Interfaces, and as President of VTLS.)



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RELEVANT LINKS



ALMA (Ex Libris)
www.exlibrisgroup.com/category/AlmaOverview

EL Commons wiki and code share (Ex Libris)
www.exlibrisgroup.org/display/ElCommons/Home

Intota (Serials Solutions)
www.serialssolutions.com/en/services/intota

ISO/IEC 27001:2005, Information technology - Security techniques - Information security management systems - Requirements
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Lankes, R. David. The Mission of Librarians Is to Improve Society through Facilitating Knowledge Creation in their Communities. The Atlas of New Librarianship.
www.newlibrarianship.org/wordpress/

NISO active projects websites
www.niso.org/workrooms/

The NIST Definition of Cloud Computing. NIST SP 800-145. September 2011.
csrc.nist.gov/publications/nistpubs/800-145/SP800-145.pdf

Open Library Environment (Kuali)
www.kuali.org/ole

Sierra (Innovative Interfaces)
sierra.iii.com/

Statement on Auditing Standards (SAS) No. 70 website
sas70.com/

Statement on Standards for Attestation Engagements (SSAE) No. 16 website
ssae16.com/

VTLS
www.vtls.com/

WorldShare Management Services (OCLC)
www.oclc.org/webscale/