Opportunities for Enhanced Services

Through Shared automation Infrastructure

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April 24, 2014
Workshop for ASERL Deans and Directors
New-generation Library Management
## Association of Southeastern Research Libraries: Current Automation Systems

This table indicates the library automation systems that have been selected by each of the members of the Association of Southeastern Research Libraries.

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<tr>
<th>ILS</th>
<th>ASERL Libraries</th>
<th>Count</th>
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<td>ALEPH 500</td>
<td>Duke University, Florida International University, Florida State University, University of Central Florida, University of Florida, University of South Florida, Library of Virginia</td>
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<td>Alma</td>
<td>Emory University, University of Tennessee -- Knoxville, Virginia Commonwealth University</td>
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<td>Horizon</td>
<td>Johns Hopkins University</td>
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<td>Sierra</td>
<td>University of Memphis, Virginia Polytechnic Institute and State University</td>
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<tr>
<td>Symphony</td>
<td>College of William and Mary, East Carolina University, Louisiana State University, Mississippi State University, North Carolina State University, University of Virginia, Vanderbilt University</td>
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<tr>
<td>Voyager</td>
<td>Auburn University, George Mason University, Georgia Institute of Technology, Georgia State University, Tulane University, University of Alabama, University of Alabama -- Birmingham, University of Georgia, University of Kentucky, University of Louisville, Wake Forest University</td>
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<tr>
<td>WorldShare Management Services</td>
<td>University of North Carolina -- Charlotte, University of North Carolina -- Greensboro</td>
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</table>

Total: 38
Fragmented Library Management

- LMS for management of (mostly) print
- Duplicative financial systems between library and local government or other parent organization
- E-book lending platform (multiple?)
- Interlibrary loan (borrowing and lending)
- Self-service and AMH infrastructure
- Electronic Resource Management
- PC Scheduling and print management
- Event scheduling
- Digital Collections Management platforms (CONTENTdm, DigiTool, etc.)
- Discovery-layer services for broader access to library collections
- No effective integration services / interoperability among disconnected systems, non-aligned metadata schemes
Is the status quo sustainable?

- ILS for management of (mostly) print
- Duplicative financial systems between library and campus
- Electronic Resource Management (non-integrated with ILS)
- OpenURL Link Resolver w/ knowledge base for access to full-text electronic articles
- Digital Collections Management platforms (CONTENTdm, DigiTool, etc.)
- Institutional Repositories (DSpace, Fedora, etc.)
- Discovery-layer services for broader access to library collections
- No effective integration services / interoperability among disconnected systems, non-aligned metadata schemes
Integrated (for print) Library System

Interfaces

Business Logic

Data Stores

Staff Interfaces:
- Circulation
- Cataloging
- Acquisitions
- Serials
- Online Catalog

Public Interfaces:
- Interfaces
- Business Logic
- Data Stores

Interfaces:
- BIB
- Holding / Items
- Circ Transact
- User
- Vendor
- $$ Funds
- Policies
LMS / ERM: Fragmented Model

Staff Interfaces:
- Holding / Items
- Circ
- Transact
- User
- Vendor
- Policies
- $$
- Funds

Public Interfaces:
- Cataloging
- Acquisitions
- Serials
- Online Catalog

Application Programming Interfaces

Protocols: CORE

E-resource Procurement

License Terms

E-Journal Titles

Vendors
Common approach for ERM

Staff Interfaces:
- Circulation
- Cataloging
- Acquisitions
- Serials
- Online Catalog

Public Interfaces:
- Application Programming Interfaces
- Budget
- License Terms
- Titles / Holdings
- Vendors
- Access Details
Gaps in Automation

- Almost no systematic automation support for references and research services
  - Customer Relationship Management?
- Resource sharing / Interlibrary loan management
- Collection development support
Comprehensive Resource Management

- No longer sensible to use different software platforms for managing different types of library materials
- ILS + ERM + OpenURL Resolver + Digital Asset management, etc. very inefficient model
- Flexible platform capable of managing multiple type of library materials, multiple metadata formats, with appropriate workflows
- Support for management of metadata in bulk
- Continuous lifecycle chain initiated before publication
Academic Libraries need a new model of library management

- Not an Integrated Library System or Library Management System
- The ILS/LMS was designed to help libraries manage print collections
- Generally did not evolve to manage electronic collections
- Other library automation products evolved:
Library Services Platform

- **Library**-specific software. Designed to help libraries automate their internal operations, manage collections, fulfillment requests, and deliver services

- **Services**
  - Service oriented architecture
  - Exposes Web services and other API’s
  - Facilitates the services libraries offer to their users

- **Platform**
  - General infrastructure for library automation
  - Consistent with the concept of Platform as a Service
  - Library programmers address the APIs of the platform to extend functionality, create connections with other systems, dynamically interact with data
Library Services Platform
Characteristics

- Highly Shared data models
  - Knowledgebase architecture
  - Some may take hybrid approach to accommodate local data stores
- Delivered through software as a service
  - Multi-tenant
- Unified workflows across formats and media
- Flexible metadata management
  - MARC – Dublin Core – VRA – MODS – ONIX
  - Bibframe
  - New structures not yet invented
- Open APIs for extensibility and interoperability
# Library Services Platforms

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<thead>
<tr>
<th>Category</th>
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<th>Intota</th>
<th>Sierra Services Platform</th>
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<td>Ex Libris</td>
<td>Serials Solutions</td>
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<td>Consolidate workflows, unified management: print, electronic, digital; Hybrid data model</td>
<td>Knowledgebase driven. Pure multi-tenant SaaS</td>
<td>Service-oriented architecture uplift for Millennium ILS. More open source components, consolidated modules and workflows</td>
<td>Manage library resources in a format agnostic approach. Integration into the broader academic enterprise infrastructure</td>
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New Library Management Model

Unified Presentation Layer

Library Services Platform

API Layer

Self-Check / Automated Return

Stock Management

Enterprise Resource Planning

Learning Management

Smart Cad / Payment systems

Authentication Service

Discovery Services

Consolidated Index

Search:

Digital Coll
ProQuest
EBSCO
JSTOR
Other Resources
Development / Deployment perspective

- Beginning of a new cycle of transition
- Over the course of the next decade, academic libraries will replace their current legacy products with new platforms
- Not just a change of technology but a substantial change in the ways that libraries manage their resources and deliver their services
Eventual product consolidation

- Alma for resource management
  - Eventual transition of Voyager and Aleph
  - Immediate transition of Verde
  - SFX
  - DigiTool for digital collections
- Primo / Primo Central for Discovery
- Rosetta for Preservation
  - Possible integration into Alma?
Open source and Open Access

- Open source development of platform services
- Open source infrastructure components
- Open APIs to expose platform services
- Knowledge base components
  - Open access
  - Community maintained
  - Adequately resourced
Open Systems

- Achieving openness has risen as the key driver behind library technology strategies
- Libraries need to do more with their data
- Ability to improve customer experience and operational efficiencies
- Demand for Interoperability
- **Open source** – full access to internal program of the application
- **Open API’s** – expose programmatic interfaces to data and functionality
Open Source Integrated Library Systems

- Major thread in library systems development
  - Koha
  - Evergreen
  - Kuali OLE
Competing Models of Library Automation

- Traditional Proprietary Commercial ILS
  - Aleph, Voyager, Millennium, Symphony, Polaris,
  - BOOK-IT, DDELibra, Libra.se
  - LIBERO, Amlib, Spydus, TOTALS II, Talis Alto, OpenGalaxy

- Traditional Open Source ILS
  - Evergreen, Koha

- New generation Library Services Platforms
  - Ex Libris Alma
  - Kuali OLE (Enterprise, not cloud)
  - OCLC WorldShare Management Services,
  - Serials Solutions Intota
  - Innovative Interfaces Sierra (evolving)
Appropriate Automation Infrastructure

- Current automation products out of step with current realities
- Increasing proportions of library collection funds spent on electronic content
- Majority of automation efforts support print activities
- Management of e-content continues with inadequate supporting infrastructure
- New discovery solutions help with access to e-content
- Library users expect more engaging socially aware interfaces for Web and mobile
Almost all library automation vendors offer some form of “cloud-based” services

Server management moves from library to Vendor

Subscription-based business model

Comprehensive annual subscription payment
- Offsets local server purchase and maintenance
- Offsets some local technology support
Leveraging the Cloud

- Moving legacy systems to hosted services provides some savings to individual institutions but does not result in dramatic transformation.
- Globally shared data and metadata models have the potential to achieve new levels of operational efficiencies and more powerful discovery and automation scenarios that improve the position of libraries overall.
Development / Deployment perspective

- Beginning of a new cycle of transition
- Over the course of the next decade, academic libraries will replace their current legacy products with new platforms
- Not just a change of technology but a substantial change in the ways that libraries manage their resources and deliver their services
Progressive consolidation of library services

- Centralization of technical infrastructure of multiple libraries within a campus
- Resource sharing support
  - Direct borrowing among partner institutions
- Shared infrastructure between institutions
  - Examples: 2CUL (Columbia University / Cornell University)
  - Orbis Cascade Alliance (37 independent colleges and universities to merge into shared LSP)
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<th>Company</th>
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Beginning of a new cycle of transition

Over the course of the next decade, academic libraries will replace their current legacy products with new platforms

Not just a change of technology but a substantial change in the ways that libraries manage their resources and deliver their services
Discovery and Management solutions will increasingly be implemented as matched sets
- Ex Libris: Primo / Alma
- Serials Solutions: Summon / Intota
- OCLC: WorldCat Local / WorldShare Platform
- Except: Kuali OLE, EBSCO Discovery Service

Both depend on an ecosystem of interrelated knowledge bases

API’s exposed to mix and match, but efficiencies and synergies are lost
Real-world Examples of Shared Infrastructure
South Australia
SA Public Library Network
140 Public Libraries
Georgia PINES

- 275 Libraries
- 140 Counties
- 9.6 million books
- Single Library Card
- 43% of population in Georgia
Recently consolidated from 4 regional networks into one

- 96 branch libraries
- 18 mobile libraries

Collections managed through single Axiell SirsiDynix Symphony LMS

http://www.ni-libraries.net/
Illinois Heartland Library Consortium

- Largest Consortium in US by Number of Members

Illinois Heartland Library System covers 28,141 square miles and serves a population of 2,248,634. There are 585 member libraries: 41 Academic, 229 Public, 259 School and 56 Special.

IHLS was created by the merger of four regional library systems in southern and central Illinois:

- Lewis & Clark Library System in Edwardsville
- Lincoln Trail Libraries System in Champaign
- Rolling Prairie Library System in Decatur
- Shawnee Library System in Carterville

Board of Directors
Staff
Advisory Council
Locations
Office Hours and Holiday Schedule
Policies
Member Libraries
Listservs for member libraries
Orbis Cascade Alliance

- 37 Academic Libraries
- Combined enrollment of 258,000
- 9 million titles
- 1997: implemented dual INN-Reach systems
- Orbis and Cascade consortia merged in 2003
- Moved from INN-Reach to OCLC Navigator / VDX in 2008
- Current strategy to move to shared LMS based on Ex Libris Alma
Shared Services

Collection Development
Technical Services

Shared Infrastructure?
Netherlands: National + major Academics

- **UBC Consortium**
Norway: BIBSYS

- Provides automation services for:
  - National Library of Norway
  - 105 Academic and Special Libraries

- History of local system development

- Originally selected WorldShare Platform for new generation system development (Nov 2010) and later withdrew (Oct 2012)

- Primo implemented for Discovery (May 2013)

- Alma selected for new shared infrastructure (Jan 2014)
Recent announcements

- **LIBROS: Academic libraries in New Mexico**
  - OCLC WorldShare

- **Ireland: National Tender for Public Libraries**
  - Tender Underway

- **PALNI: Private Academic Libraries in Ohio**
  - OCLC WorldShare
Wales: possible shared system for Academic libraries

- Welsh Higher Education Libraries Shared LMS Services
- Shared LMS Study:
- http://blogs.cardiff.ac.uk/sharedlms/
- Tender posted Jan 24, 2014
Recent announcements

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Company and Product Perspectives
Non-profit corporation based in Dublin Ohio

$203.5 million revenue 2011/12 fiscal year

Owned and Governed by membership: Board of Trustees, Global and Regional Councils

Pending lawsuit between SkyRiver / Innovative vs OCLC (in limbo since April 2011)

Annual Reports available:

WorldShare Platform

- Basis of new suite of management tools for libraries
- WorldShare Management Services: displaces basic ILS
- WorldShare License Manager: Displaces ERM
- WorldShare Metadata Management:
  - Initial offering involves e-book sets
- WorldShare Interlibrary Loan
OCLC Product Strategy

- Leverage WorldCat to power both discovery and management
- Leverage values of broad-based resource sharing
- Leverage concept of global library community
Ex Libris

- Positioned to be the largest company in the industry
- Formidable competition for Academic Libraries
- Global marketing strength
  - Europe, Asia, North America
  - Latin American distributor
- Longstanding business strategy based on research and development
  - 170 personnel in development out of 512
Ex Libris Product Strategy

- Legacy ILS remain viable and profitable
  - Aleph – Many national and large research library installations
  - Voyager – Many national and academic research
    - Customer base seeing some erosion to competing systems
- Alma developed as replacement for Aleph, Voyager and to attract new academic clients
  - Academic libraries running non-specialized ILS targets for Alma
Primo / Primo Central

- Very specialized discovery tool for academic libraries
- Local installation or hosted
- Libraries load and index local content through customizable pipes
  - Customized display and indexing policies
Primo Central Index

- Hosted index of library content resources
  - Articles, book chapters, e-book collections, specialized research products
- Ex Libris established strong publisher relations going back to OpenURL
Ex Libris has invested in the content resources needed to drive technology products

- SFX Global Knowledgebase: Developed and maintained by Ex Libris
  - See: Knowledge Base and Link Resolver Study
- A core component of Alma
Alma

- Developed specifically for Academic Libraries
- Replaces all other strategic infrastructure systems
  - ILS + Link Resolver + Digital Asset Management + ERM
- Paired with Primo and Primo Central
- Over 120 institutions signed so far
ProQuest (formerly Serials Solutions)

- Focus on Academic Libraries
- Summon: first Web-scale Discovery Service
- Intota: Planned Library Services Platform
ProQuest Strategies

- Focus on multi-tenant software as a service
- Knowledge-base driven products
  - KnowledgeWorks: drives 360 Core, 360 Resource Manager, 360 Link
  - Expanded KB will drive Intota
- Summon+ 360 Products will drive Intota sales to displace legacy ILS
- Intota functionality: less complex approach than ILS model
Innovative Interfaces

- Continuity of history and product development
- Sierra: New Library Services Platform + mature functionality
- Encore: Discovery interface
  - Synergy: Federated search approach to article content
  - EDS Integration: upcoming index-based discovery
Polaris (now part of Innovative Interfaces)

- Major competitor for public libraries
- Mid-sized company (86 employees)
- Focus:
  - Market: US Public Libraries
  - Technology: MS Windows platform
- Strong customer service performance
Polaris – product strategy

- Strong functionality for public libraries
- Benchmarked performance for large municipal installations
  - Building strong track record for ever larger systems
- Integration with many partners: self-check, messaging, etc.
Polaris user interface strategy

- Positions PowerPAC as discovery service
  - Relevancy, facets, book jackets, etc.
- Almost all implementations use PowerPAC except when already in place:
  - Phoenix: Endeca
  - Boston Public: BiblioCommons
- E-book integration with 3M Library Systems
  - Example of aggressive integration strategy
Growing in some markets, declining in others

Two legacy ILS products: Horizon and Symphony

- Both loosing customers
- Symphony winning new sites, mostly outside the US
Layer new technologies on the old

- Web Services layer for Horizon and Symphony
- New “BLUE Cloud” interface products
  - Enterprise
  - Portfolio
  - BookMyne
  - Social Library (Facebook app)
- eResource Central
  - e-resource management and discovery (mostly e-books)
  - 1-click check-out and download of e-books
Open Source Automation Systems

- Koha
  - smaller public and academic libraries
  - Used for some consortia (SKLS)
- Evergreen
  - Designed for Library Consortia
- Kuali OLE
  - Designed for large research libraries
Koha

- Traditional ILS developed in Open Source model
- Perl / MySQL / Linux
- Problems with scaleability
  - Apache SOLR, Plack added recently
- New US contracts going mostly to smaller public and academics
Evergreen

- Popular system for state funded initiatives
  - Georgia Pines
  - Virginia Evergreen
  - Indiana Evergreen
  - Pennsylvania Integrated Library System: SPARKS
  - Massachusetts: CW/MARS, Bibliomation, Merimack
  - British Columbia SITKA
  - North Carolina Cardinal
  - Vermont: new Catamount project
Kuali OLE

- Enterprise level library services platform
- Financial and in-kind contributions from investing institutions
- Matched by the Andrew W. Mellon Foundation
- Major academic libraries in the US involved as original investing partners
- UK: Senate House Library + Bloomsbury Colleges now committed in principal
Kuali OLE Timetable

- In development since 2009
- Some libraries may go live in 2013
- GOKb project started in 2012 for e-resource management
Open Source ILS environment

- Partially funded through grant funding
  - IMLS
  - Andrew W. Mellon Foundation
  - State grants
Changing nature of automation projects
Trend toward shared infrastructure

- United States: ambition toward state-level ILS
- Australia: true state-level: South Australia, Victoria, etc
- Denmark: Tender out for national infrastructure
- Finland: work toward national ILS
- Expect more
Increased uptake in academic libraries of Web-scale discovery services

- Almost a “must-have” product as one component of overall resource discovery and dissemination strategy
- Yet, the number of discovery service installations remains a fraction of library management systems.
Counter trend

- Some libraries resist investing in a discovery service citing:
  - Google Scholar performs adequate discovery
  - High cost of discovery services
  - Concerns for bias
Trend

Tendency toward re-alignment with management systems

- Alma + Primo / Primo Central
- Sierra + Encore
- WorldCat Local + WorldShare Management Services
- Intota + Summon
Counter trend

Many libraries continue separate discovery strategies

- Open source discovery + licensed Web-scale index
- EBSCO Discovery Service: strategy to integrate with any back-end ILS or LSP
Why not integrate management and discovery?

- Less dependence on single supplier
- Best of breed in each product category
- Increased customizability and local integration
Demise of the local catalog

- Many library services platforms do not include the concept of an online catalog dedicated to local physical inventory
- Designed for discovery services as public-facing interface
- Implication: Discovery service must incorporate detailed functionality for local materials and related services
Trend

Content providers cooperate with discovery service providers for indexing in Web-scale services

- New content partnerships continue to be announced
- Web-scale discovery service providers assert that most scholarship in English now well covered and are now focusing on international and specialized resources
Trend

Evolving ecosystems of content discovery, resource management and discovery

- Single organization involved in the provision of
  - content resources
  - resource management services
    - Focus on usage analytics
  - discovery services

Can discovery be used to influence content acquisition?
Example:

- **ProQuest:**
  - ProQuest content products
  - Summon
  - Intota
    - Initial module: Intota Assessment

- **EBSCO Information Services**
  - Subscription Services
  - EBSCOENT: ERM Essentials
  - EBSCOhost content platform
  - EBSCO Discovery Service