

## LIBRARY SYSTEMS & INTEROPERABILITY: BREAKING DOWN SILOS

**CORE: Exchanging Cost Information  
Between Library Systems**  
Ed Riding, Technical Product Manager, SirsiDynix

**Moving Library Management  
Services to Web-scale**  
Andrew K. Pace, Executive Director, Networked  
Library Services, OCLC

**Open Discovery of Library Resources:  
DLF's ILS Discovery Interfaces Project**  
John Mark Ockerbloom, Digital Library  
Architect and Planner, University of Pennsylvania



June 10, 2009

[www.niso.org/news/  
events/2009/interop09](http://www.niso.org/news/events/2009/interop09)



## NISO 2009 Events

<http://www.niso.org/news/events/2009/>

- July 10, 12:30 - 4:00 p.m. (Chicago, IL, ALA Annual):  
**NISO/BISG Forum: The Changing Standards Landscape: E-books**
- July 9-13 (Chicago, IL): **NISO @ ALA Annual 2009**
- July 25, 3:30 - 4:30 p.m. (Washington, DC, AALL Conference):  
**Standards Development: How It Happens, and How to Get Involved**
- August 12 (NISO Webinar): **E-Books: A Rapidly Evolving Marketplace**
- September 9 (NISO Webinar):  
**E-Resources Licensing: The Good, The Bad, The Ugly**
- October 8-9 (Boston, MA): **Library Resource Management Systems**
- October 14 (NISO Webinar): **Bibliographic Control Alphabet Soup:  
AACR to RDA and Evolution of MARC**
- November 11 (NISO Webinar):  
**Data, Data Everywhere: Migration and System Population Practices**
- December 9 (NISO Webinar):  
**ONIX for Publication Licenses: Adding Structure to Legalese**

• Register for three webinars, get one free!

NISO Webinar • June 10, 2009

## NISO CORE: Cost of Resource Exchange

Ed Riding & Ted Koppel  
June 10, 2009

## Presentation Overview

- Definition of the Problem
- Participation
- Creation of the Solution
- Status Report
- Next Steps

## The Problem

- E-Resource financials frequently not stored and processed in ERM
- ERM needs financials to calculate cost per use and help determine E-Resource purchases, renewals and cancellations
- How can the ERM take advantage of data stored and processed elsewhere?
- Multiple ILS and ERM vendors

## History

- 2006 discussions between Ed Riding (SirsiDynix), Jeff Aipperspach (Serials Solutions), and Ted Koppel (then Ex Libris, now Auto-Graphics) needed to serve mutual customers
- Digital Library Federation (DLF) ERMI II “next-step” project

## DLF ERMI II White Paper

- DLF ERMI II Subcommittee
  - Norm Medeiros, Haverford College
  - Adam Chandler, Cornell University
  - Linda Miller, Library of Congress
  - Angela Riggio, UCLA
- Questionnaire and personal interviews with ERMS and ILS product managers and librarians
- Created whitepaper with suggested data elements

## Pre-NISO Activities

- Ed, Jeff, and Ted surveyed various ERM and ILS vendors to determine feasibility
  - Validated some data elements with vendors
- Discussed goals at ER&L 2007, at ALA Conference, and various other venues to determine interest, need, potential participants
- Approached NISO (November 2007) as standards development framework

## NISO CORE Working Group

- NISO Business Information Topic Committee approved CORE Working Group
- Solicitation of Working Group members
  - 13 Vendors/Standards organizations
  - 6 Libraries
- First meeting: August 6, 2008
- DSFTU approved: March 31, 2009

## NISO CORE WG Members

- Ted Koppel (Auto-Graphics)
- Ed Riding (Sirsi-Dynix)
- Kathy Klemperer, (EDITEUR)
- Nettie Lagace (Ex Libris)
- Brian Rosmaita (VTLS)
- Rose Nelson (Colorado Alliance)
- Joyce McDonough (Columbia)
- Debbie Logan (EBSCO)
- Bob McQuillan, (Innovative)
- Kelvin Watson (TLC/CARL)
- Dani Roach (Univ. of St Thomas)
- Mary Walker (Wichita State)
- Clara Ruitenberg (Georgetown)
- Bill Hoffman (Swets)
- Jeff Aipperspach (Serials Solutions)
- Rafal Kasprowski (Rice)
- Gracemary Smulewitz (Rutgers)
- Candy Zemon (Polaris)
- Karen Wetzel (NISO)
- Mark Wilson (retired; XML advice)

## Determined Goals

- Not just ERM--ILS exchange, but broader applications exist (vendors, consortia, etc.)
- Didn't want to duplicate work of existing standards (SOH, etc.)
- Keep it simple and generic
- Define the data – not the application !!!

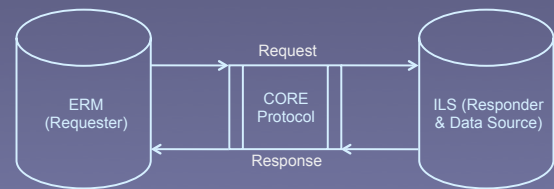
## Working Group's 2008 Activities

- August-September: wrote, designed, discussed Use Cases.
- October: analyzed use cases for common needs, vocabulary, and data elements
- October-November: Refined use cases to identified CORE elements
- November-December: XML message structure, transport mechanism
- December-March: Draft document

## Solution

- XML Schema which defines the request and response payload
- Three type of queries
  - Request info for a single order
  - Request info for a single product
  - Request transaction info on all products
  - Can filter any of these by access (subscription) or fiscal year date range

## CORE Exchange



## Request Elements

- Requester ID
- Order ID
- Product ID
- Customer ID
- Access Period (subscription) date range
- Payment Period (fiscal year) date range

## Response Elements

- Requested data fields
- Product ID/Product Name
- Payment Amount, Payment Date, Currency
- Publisher, Medium, Platform
- Vendor, PO Number, Consortium ID
- Order ID, Invoice Number, Invoice Date, Line Item Number, Quantity, Library Fund Code

## Current Status

- Draft Standard for Trial Use (DSFTU) released in March 2009 as NISO Z39.95-200x
- Draft standard period will be 12 months
- Invitations sent to all WG members
- Invitations to other vendors in progress
- Vendors need to be encouraged to include CORE in their priority list

## During the DSFTU period ..

- Vendors write their applications to use CORE
- Testers report problems to WG
- WG considers solutions
- If necessary, WG will create and publish additional updates in drafts/updates
- Depending on testing, final standard could be ratified by April 2010

## CORE Purpose

CORE defines an XML schema to facilitate the exchange of financial information related to the acquisition of library resources between systems. The two systems may be within the same organization, e.g., an ILS and an ERMS, or from two different organizations, e.g., a subscription agent and a library.

## Please contact

- Ted Koppel ([tpk@auto-graphics.com](mailto:tpk@auto-graphics.com))
- Ed Riding ([ed.riding@sirsidynix.com](mailto:ed.riding@sirsidynix.com))
- CORE site: [www.niso.org/workrooms/core](http://www.niso.org/workrooms/core)
- CORE DSFTU: [www.niso.org/standards/z39-95/](http://www.niso.org/standards/z39-95/)

10<sup>th</sup> June 2009

### Moving library management services to Web-scale

Andrew K. Pace  
Executive Director, Networked Library Services



### Agenda: please remain seated...



- “Web-scale management services” (1,000 feet)
- Web-scale (10,000 feet)
- Web-scale in the context of libraries (5,000 feet)
- An opportunity for *truly* next-generation library management services (500 feet)
- Descriptions and “timelines” (100 feet)
- Landing

### “A first step...”



News release

#### OCLC announces strategy to move library management services to Web scale

DUBLIN, Ohio, USA, 23 April 2009—OCLC is connecting the content, technology and expert capabilities of its member libraries worldwide to create the first *Web-scale*, cooperative library management service. Member libraries can take the first step to

## Web-scale management services

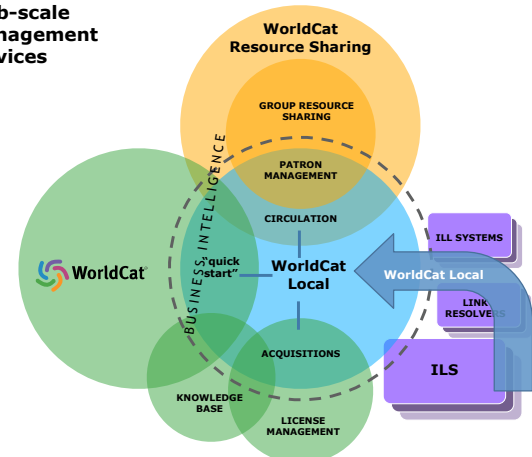
### the first cooperative library management service

year history of innovation and cooperation,” said Jay Jordan, OCLC President and CEO. “In 1987, OCLC Founder Fred Kilgour revealed a strategy to create an online union catalog through shared participation in order to better fulfill our mission. Over the

Libraries that subscribe to FirstSearch WorldCat will get the WorldCat Local “quick start” service as part of their subscription at no additional charge. WorldCat Local “quick start” offers libraries a locally branded catalog interface and simple search box that presents localized search results for print and electronic content along with the ability to search the entire WorldCat database and other resources via the Web.

OCLC plans to release Web-scale delivery and circulation, print and electronic

### Web-scale management services



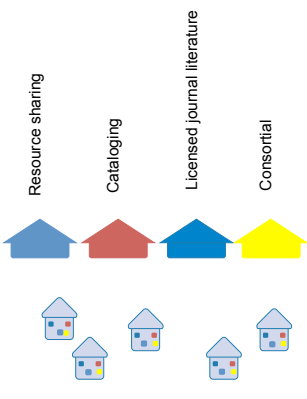
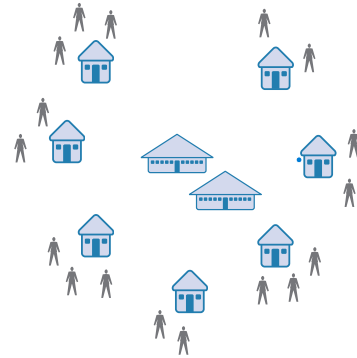
## Web-scale



Chris Anderson

The web is all about scale, finding ways to attract the most users for centralized resources, spreading those costs over larger and larger audiences as the technology gets more and more capable.

## Libraries the old way: Gravitational Pull



## WEB 2.0?

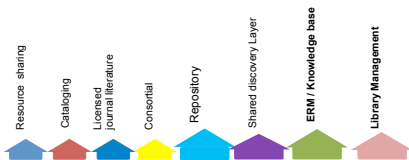
Concentration  
Scale matters  
Data

Diffusion  
Spread matters  
Syndication

"[There is] a major theme of web 2.0 that people haven't yet tweaked to. It's really about data and who owns and controls, or gives the best access to, a class of data."

- Tim O'Reilly, April 2007

## Libraries in a Web-scale landscape



## Web-scale value proposition



On average, businesses spend **70%** of their time building and maintaining and worrying about infrastructure, and **30%** of their time focused on the ideas that propel their business forward.

Web-scale computing is helping to invert the **70/30** ratio, enabling you to spend your energy creating the difference that will make your business successful.

Amazon

## Why OCLC and Web-scale management services?



- **Inability of current systems** to deal with changing environments
  - Libraries are required to add more and more local systems to enhance services and deal with the changing nature of library collections
- **Few alternatives**
  - Many “new” solutions preserve legacy workflows and the network-free nature of stand-alone systems; most are built on old technology
  - Few definitive opportunities to reduce the Total Cost of Ownership (TCO) of running local systems
- **OCLC remains uniquely positioned** to create change
  - Leverage the power of the cooperative; starting with WorldCat
  - Provide a Web-scale solution with enough functionality and newly integrated

## “Library Web-Scale”



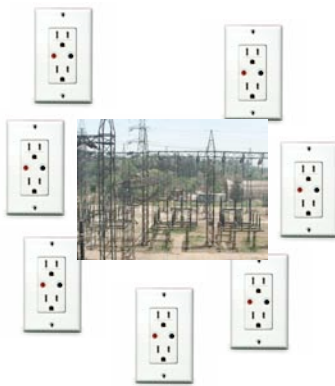
Worldwide libraries and worldwide library transactions

<b>Libraries Worldwide</b>	<b>1,212,383</b>
<b>Books: physical processing</b>	<b>15,517,196,010</b>
<b>Back-office transactions</b>	<b>61,879,349</b>
<b>OPAC searches</b>	<b>105,607,800,600</b>
<b>Data</b>	<b>105,607,800,600</b>
<b>Circulation</b>	<b>105,607,800,600</b>
<b>Annual transactions</b>	<b>18,954,563,140</b>

Possible with a handful of commodity servers

18,954,563 transactions / day

5,265 transactions / second



OCLC Strategy

## Build Web-scale for libraries



- Create a compelling user environment
- Make WorldCat Grid Services a valued part of library operations
- Increase OCLC’s global relevance and position of trust
- **Create system-wide efficiencies in library management**



## Web-scale management for libraries

Creating system-wide efficiencies in library management workflows



Libraries have added more systems to support online public access catalogs, ERM Acquisitions, digital asset management, and access to licensed resources.

Libraries have made significant investments in computer resources and infrastructure.

Libraries have a fragmented presence on the Web, where they must compete with search engines and other information resources in meeting the information needs of people.

Libraries back-office systems remain antiquated, preserving legacy workflows created for print-only collections



## Evolving from local library systems



A web-scale strategy would provide libraries with computer hardware and software infrastructure on the Web, where they could use the workflow applications they need.

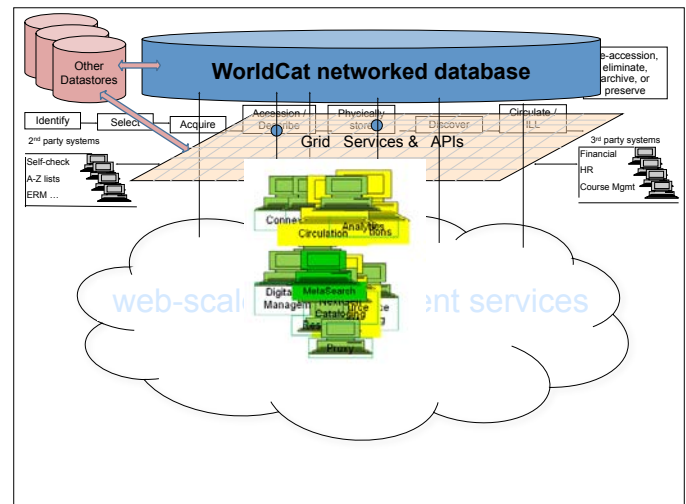
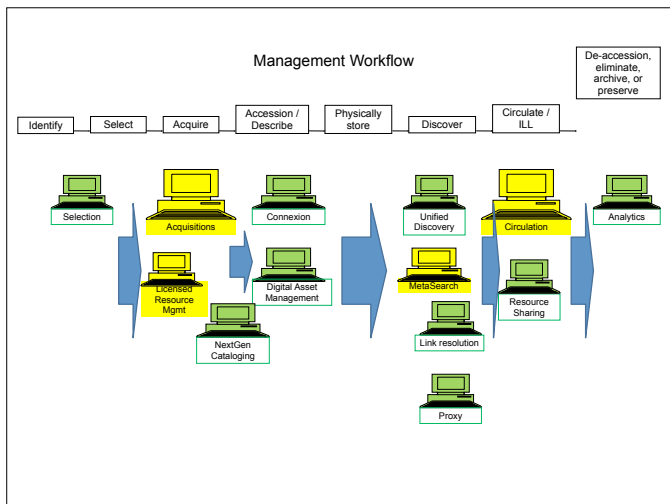
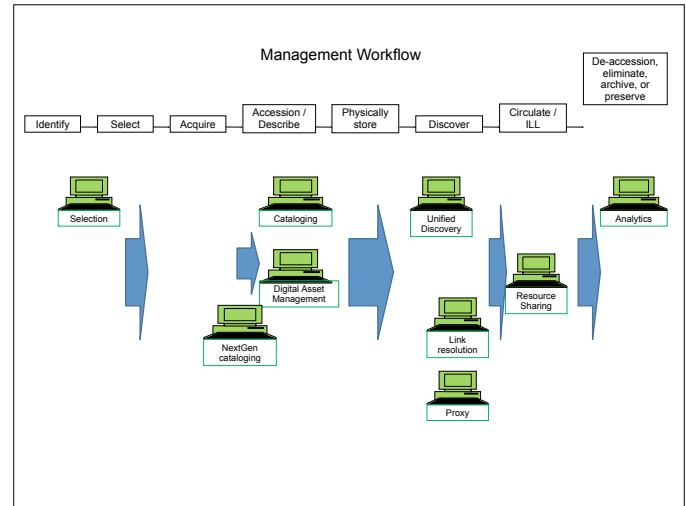
Rather than buying, implementing and maintaining software themselves, libraries could use an application without having to worry about the technology that supports the application, freeing libraries to focus on running their organizations and serving their users.



## Building Web-scale Management Services A truly "next-generation" of Library Management Services



- A **Web-based** platform for all basic library management functionality
- **Reduced Total Cost of Ownership (TCO)** and increased efficiency through a unified management platform for all types of materials, regardless of format or method of acquisition
- A flexible and customizable **workflow** platform
- **Network effects** by sharing applications and data between libraries
- **Concentrated data registries** and repositories
- A **Service-Oriented Architecture (SOA)** for interoperability with local environments and 3<sup>rd</sup> party business process systems (e.g., financial management, HR systems, and course management)



## Components (major sea-change in orange)



### Circulation & Delivery

Patron Management; Checkout/Checkin; Renewal; Holds; Notification; Billing; Self-checkout; Patron self-service; Reports

### Acquisitions & Serials (print and licensed)

Resource discovery; vendor management; Purchase order, invoice, and subscription management, budget/fund management, serials management, inventory management/de-accession, reports, **licensed resource management**; Reports

### License Management

**License Storage**; ILL Fulfillment services; **License Workflow & Negotiation**; SERU / ONIX-PL Support; License Term Management; COUNTER / Sushi Reporting; Reports

### Workflow

Workflow engine; Task assignment; Task management; Configuration; Standard Activities and Processes; Graphical view and editor for library workflows

### Service Configuration

Unified OCLC Product and service configuration

### Cooperative Intelligence / Analytics

Consortial fund management; Collection management; Coordinated collection development; Usage statistics and Cost Per Use; Real-time circulation data; Collection shifting / offsite storage; Recommender services (staff & patron); Order list comparisons; Knowledgebase change tracking; Collection profile sharing; Enhanced resource information

## More details: building from existing web-scale



- Built as a logical extension to the WorldCat Local public interface –putting the pieces back together again
- Connexion is the cataloging client for web-scale management services, but....
- Item-level **metadata maintenance**, a new **multi-format acquisitions** service, **up-stream metadata** capture, and **integrated selection** begins the process of creating a truly next generation metadata management component

## Next steps: Strategy and Tactics



- Test/pilot sites to be named soon
- Library Advisory Council (“Strategy”)
  - Strategic direction, reality checks, and moral support
- Library Steering Committees (“Tactics”)
  - Access Services, Technical Services, Systems, and Management Workflow experts

## Next steps: Brass Tacks



- Agile methodology
  - develop, test, pilot...develop, test, pilot...develop, test, pilot
- Site Testing, Pilot, and Roll-out
  - Service Configuration already available for WorldCat Local and WorldCat Local “quick start”
  - Circulation component testing begins in the U.S. this month (!!); pilot release in the fall; continued test/pilot through mid-year 2010
  - Print and licensed Acquisitions & serials, Workflow, and License Manager development well underway; test and pilot in functional phases beginning in 2010
- Interoperability Assessment
  - 3<sup>rd</sup> party business process systems; library business process systems; OCLC Developers Network and API development
- Internationalisation and Localisation

## Additional information



### Questions/comments about Web-scale management services

- Hectic Pace blog  
<http://community.oclc.org/hecticpace/>

### OCLC Product Works

- <http://www.oclc.org/productworks/>

### WorldCat Local “quick start” Web site

- <http://www.oclc.org/worldcatlocal/quickstart>

### Register for ongoing email updates about WorldCat services

- <https://www.oclc.org/email/subscribe.htm>

Thank you!  
pacea@oclc.org

## Open discovery of library resources

The Digital Library Federation's  
ILS-Discovery Interface recommendations

John Mark Ockerbloom  
NISO Webinar  
June 10, 2009

## Questions I'll address

- Why do we need standard discovery APIs for ILS's?
- What are the DLF ILS-DI recommendations, and how did they come about?
- How can the recommendations be implemented?
- What can be done to advance the recommendations, and further promote interoperable discovery?

## Your ILS is too small



Photo by Mark Drewe, 2008 (Creative Commons BY-ND)

John Mark Ockerblom UNIVERSITY OF PENNSYLVANIA LIBRARIES June 10, 2009

## Discovery in a library framework

Screenshot from Penn Libraries FindIt application

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## ... or facet-based browsing...

Screenshot from Penn Libraries DLA prototype

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## ...or semantic relationships...

Screenshot from Penn Libraries semantic map prototype

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## ... or community use ...

Screenshot from Penn Libraries PennTags application

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## ...inside or outside "the OPAC" ...

Screenshot from Penn Libraries Franklin OPAC

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## ...highlighting what's special in your library

VCat Video Catalog

Search  
chintatown

1.5 record(s) found for 'chintatown' all word(s)

**Amarilly of Clothes-line Alley (1918)**  
Available: Van Pelt Video Collection; ask at Circulation Desk. DVD • 1999  
Call No. DVD P5322.A489 A12 1999  
"Amarilly is the belle of Clothes-line Alley, a neighborhood near San Francisco's Chinatown. One night after a fight breaks out in the club where she works as a cigarette girl, Amarilly brings an injured socialite home with her. Grateful for her care, he hires Amarilly to clean his apartment and over time begins falling in love with her. But when Amarilly is presented at a post-social gathering, the disastrous results fuel the battle of high and low society."--Container.

**At the jazz band ball : early hot jazz, song and dance 1925-1933 (1993)**  
Available: Van Pelt Library Ormandy Music and Media Center. VHS • 1993  
Call No. VHS P5322.A489 A12 1999

**Chinatown (1974)**  
Circulation Review, Van Pelt Video Collection. VHS • 1999  
Call No. VHS P5322.A489 A12 1999  
Los Angeles private eye Jake Gittes (Nicholson) is approached by a mysterious woman (Faye Dunaway) who wishes to have her husband investigated. As the case unfolds, though, he discovers it to be much more complex and dangerous than he had expected, involving politics, powerful men, and terrible family secrets.

**Chinatown (1974)**  
Available: Shelves at Storage. Click here to request delivery. VHS • 1999  
Call No. VHS P5322.A489 A12 1999  
Los Angeles private eye Jake Gittes (Nicholson) is approached by a mysterious woman (Faye Dunaway) who wishes to have her husband investigated. As the case unfolds,

**What's new in VCat?**

**BROWSE BY:**  
Title  
People  
Actors  
Directors  
Genre  
Country  
Language

Screenshot from Penn Libraries Vcat application

## Some may adopt a centralized framework...



in association with amazon.com®

Mockup shamelessly fabricated by the author

## ...or an enterprise framework...

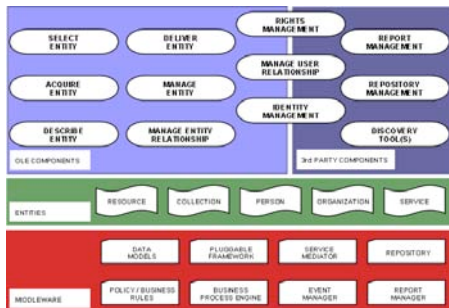


Diagram from OLE project draft documentation

## ..but, however your ILS evolves

Libraries should have the power to make their resources discoverable in whatever ways best serve their patrons

Our data, our destinies

## ILS-DI: Services supporting discovery, from search to use

- Finding relevant resources (discovery)
- Acquiring them (delivery)
- Managing their usage (patron services)
- We're not addressing other integration:
  - Acquisitions integration (e.g. w/ financial systems)
  - Cataloging integration (e.g. w/ external cataloging partners inside and outside "librarian" community, multiple forms of catalog data beyond MARC)
  - Item management (physical or digital)

## The ILS-DI task group

- John Mark Ockerbloom, Penn (chair)
- David Bucknum, Library of Congress
- Todd Grappone, USC
- Dave Kennedy, University of Maryland
- Emily Lynema, NC State
- Patricia Martin, California Digital Library
- Dianne McCutcheon, National Library of Medicine
- Terry Reese, Oregon State

## The ILS-DI steering group

- Peter Brantley, DLF (chair)
- Dale Flecker, Harvard
- Marty Kurth, Cornell
- Terry Ryan, UCLA
- Robert Wolven, Columbia

## How this came together

- **Spring 2007 DLF forum:** Open discussion among library representatives surfaced need for standards
- **September 2007 survey:** Survey of library professionals clarified interests, priorities, requirements, for standard interfaces
- **November 2007 presentation:** First recommendation draft released, discussed at fall DLF forum
- **March 2008 summit:** Vendors and developers met to agree on basic discovery interfaces (BDI): "Berkeley Accord"
- **June 2008 publication:** First official recommendation
- **August 2008 followup summit:** Developers discuss implementation strategy, revisions to specifications
- **December 2008 revision:** Published, task group done

## A layered recommendation

- **Service requirements**
  - 4 basic types of services: Data aggregation, Real-time search and queries, Patron services, OPAC interaction
  - E.g. "We need ways to extract bibliographic data from the ILS so it can be indexed and searched in other applications"
- **Functions**
  - 25 functions specifying particular behaviors, input, outputs, semantics for desired services
  - But in a technology-independent way
  - E.g. **HarvestBibliographicRecords**, **HarvestExpandedRecords** functions specify ways to get bibliographic data
- **Bindings**
  - Specific technologies, interfaces for functions (at least 1 for each)
  - Specifies protocols and data standards in implementation-independent way
  - E.g. OAI-PMH profiles for the Harvest...Records functions
  - Multiple bindings can exist for a given function, but it's useful to recommend one preferred binding

## Basic discovery interfaces: "Level 1" of interoperability

1. **Export bibliographic data for indexing, search**
    - Functions: **HarvestBibliographicRecords**, **HarvestExpandedRecords**
    - Incremental harvesting must be supported
    - Recommended binding: OAI-PMH
  2. **Identify available items from a search:**
    - Function: **GetAvailability**
    - Multiple-item queries must be supported
    - Recommended binding: REST/HTTP with XML response
  3. **Let users request items (via the OPAC)**
    - Behavior: **GoToBibliographicRequestPage**
    - Recommended binding: URL template (can be OpenURL)
- **Recommendation includes**
- detailed specs of 1 recommended binding for each function above
  - Commitment by many vendors to support it: "Berkeley Accord"

## A simple call: GetAvailability

### Request:

[http://devfranklin.library.upenn.edu/cgi-bin/availability?id=2837207&id\\_type=bib](http://devfranklin.library.upenn.edu/cgi-bin/availability?id=2837207&id_type=bib)

### Response:

```
<dlf:collection xsi:schemaLocation="http://diglib.org/ilsdi/1.1/  
http://diglib.org/architectures/ilsdi/schemas/1.1/dlfexpanded.xsd">  
<dlf:record>  
<dlf:simpleavailability>  
<dlf:identifier>2837207</dlf:identifier>  
<dlf:availabilitystatus>available</dlf:availabilitystatus>  
<dlf:availabilitymsg>Not Charged</dlf:availabilitymsg>  
<dlf:location>Van Pelt Library; Call No. PS153 .N5 H37 2008</dlf:location>  
</dlf:simpleavailability>  
</dlf:record>  
</dlf:collection>
```

## Higher levels of interoperability

- **Level 2: Elementary OPAC supplement**
  - Add real-time search, browse, record retrieval
    - » (possible bindings: SRU, OpenSearch)
  - Also add authority harvesting, OPAC embed/transform
- **Level 3: Elementary OPAC alternative**
  - Add direct patron functions (status, hold, recall, renew...)
    - » (possible bindings: NCIP subsets; OpenURL)
- **Level 4: Rich / domain specific discovery**
  - Add course reserve search for academic libraries
  - Add Explain, reflective interfaces
  - Add more options to functions above

We don't fully specify these levels, but give abstract function definitions, recommend 1 or more binding technologies for each function, and encourage experimentation, implementation, and eventual standardization

## Implementing Basic Discovery Interfaces on an existing ILS

- **GoToBibliographicRequestPage**
  - Already in Voyager 7 (based on bibids)
  - Just need to turn it on
- **GetAvailability**
  - Implemented at Penn on Voyager's database tables
  - Implemented at Duke on Aleph's X-Services
- **HarvestBibliographicRecords**
  - OAI-PMH MARC record exporter for Voyager implemented by Finland national library
  - Slight adjustments needed to meet ILS-DI semantics
- **HarvestExpandedRecords**
  - An extension of the **HarvestBibliographicRecords** implementation
  - Future work

## Implementing the interfaces generally

- **Direct ILS supplier support best**
  - Could be built directly into new versions of ILSs
  - Or as add-on, alternative, or overlay to vendor-specific APIs
  - Many vendors agreed to support Basic Discovery Interfaces
    - › [Talis](#) / [Ex Libris](#) / [LibLime](#) / [BiblioCommons](#) / [SirsiDynix](#) / [Polaris Library Systems](#) / [VTLS](#) / [California Digital Library](#) / [OCLC](#) / [AquaBrowser](#)
  - Priority depends on customer request and feedback
- **Useful interfaces...**
  - Fully and openly document interface binding details
  - Have as few IP encumbrances as possible
  - Ideally, provide both server and client implementations
    - › Open source clients may be particularly useful for discovery application development
    - › Open source services can be debugged, improved by vendors, community

## Building on the recommendations

- **DLF recommendation at stable point**
  - DLF task group done its task, DLF itself folding into CLIR
- **Time now for implementation, advocacy, extensions**
  - ILS Vendors and developers: Providing ILS-DI APIs
  - Libraries, app developers: Requesting, testing, using APIs
  - Extended interfaces (e.g. enhanced [GetAvailability](#))
  - Alternative interfaces (e.g. Jangle's Atom-based APIs)
  - Non-ILS-based collections (e.g. Online Books, repositories)
- **Eventually, further standards work useful**
  - Revisiting Basic Discovery level, specifying higher levels
  - Process should be lightweight, with peer review, fairness
  - Needs a sponsor, and a sustainability model

## Where to learn more, and participate

- **The DLF recommendation:**
  - <http://diglib.org/architectures/ilsdi/>
- **A discussion group:**
  - [ils-di@googlegroups.com](mailto:ils-di@googlegroups.com)
- **Tracking follow-on and related work:**
  - <http://everybodyslibraries.com/>
- **Questions about presentation, task group:**
  - [Contact me at ockerblo@pobox.upenn.edu](mailto:contactme@ockerblo@pobox.upenn.edu)
- **Support for the interfaces in your ILS:**
  - [Contact your ILS provider](#)

Thank you!

## Library Systems & Interoperability: Breaking Down Silos

# Thank you!

Slides and Q&A from this webinar will be posted on the NISO website following the webinar:

<http://www.niso.org/news/events/2009/interop09/>