Data quality, policy, and large-scale data flows

NISO Webinar
November 11, 2009

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My Background

• Work with libraries to merge and populate bibliographic and other system data
• 15 years at Innovative
• MLIS University of North Texas

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Agenda

• To Merge or Not To Merge?
• Challenges
• Quality Implementation Practices
• Strategic Policy Decisions
• Data Quality and Standards
• Project Management

To Merge or Not To Merge: Merge!

• Initial Data Population Planning
• Ongoing Maintenance and Growth
  – Authority Control
  – Outsourcing
  – Institutionalizing Practices
• Duplicate Records, Who Wins?
Challenges

• Quality of Data or Cataloging Practices
• Maintaining Encoding Levels?
• Record Source Quality
• Local Practices and Needs
  — Item identification, barcodes, call numbers
  — Licensing Information
  — ISSN/ISBN Cataloging Practices
  — 856 and other URL Link Uses
  — Etc.…

Quality Implementation Practices

• Following Standards
• Set Local Control Policies
• Match Points and Control Numbers
• Consider End User, Is More Data Better?
• User Interface Considerations

Strategic Policy Decisions

• Consider Data Alive and Evolving
• Consistency and Simplicity Win
• Don’t Make Policies Based on Today’s Needs
  — User Interface Changes
  — Future Data Mergers
  — Possible Data Splits?
  — Staff Costs to Maintain Customized Practices

Data Quality and Standards

• Cataloging Quality
• Bibliographic Records
• Electronic Resources
• Metadata
• Beware the Cleanup Project
• Leverage Computing Power

Project Management

• Who Decides and Who Does the Work?
• Reconsider Local Workflows
• How Do Others Do It Successfully?
• Plan Ahead
• Don’t Plan for Perfection

Conclusions

• Plan for the Life of the Data
• Standards!
• Decision Making and Teamwork
• Make Computing Power Work For You
• Be Realistic
Data, Data Everywhere and Constantly Moving: The Challenge of Ongoing Migration

Maribeth Manoff
University of Tennessee (UT) Libraries
NISO Webinar – November 11, 2009

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Data Migration and System Population at the UT Libraries

- Large, “one-time” system migration
- Implementation of a new Integrated Library System (ILS)
- Ongoing migration / constant system population
  - The link resolver “knowledge base”
  - A “next generation” discovery and delivery system

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Large, “One-Time” System Migration

- Migration to a new ILS (2003)
- Moved to Aleph from 3 separate systems:
  1) Cataloging and Circulation - Horizon
  2) Acquisitions and Serials - GEAC
  3) Web OPAC – OCLC SiteSearch (Z39.50)
- Data migrated was in known, or at least familiar, formats

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Migrating Data in Known Formats

1. Bibliographic data in MARC format
   - 1.6 million bib records “straight” MARC to MARC
   - Brief order bib records from acquisitions system
     - Some matching and mapping required for orders to be attached to the correct bibliographic record
   - Course reserves records
     - Also in MARC format; stored in a different database table in the new system

2. Item / Holdings data
   - Translation algorithm for item records considering location, collection, and call number (from either bib or item) to holdings records in MARC format
   - Import data stream of item records from Horizon to create holdings and item records in Aleph

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Known Formats (cont.)

- For Non-MARC data – formats are not standardized, but data elements within the tables are familiar
  - Circulation data from Horizon
    - Patrons (4 tables)
    - Loans
    - Hold requests
  - Acquisitions and Serials data from GEAC
    - Orders
    - Subscriptions
    - Budgets
    - Vendors, Vendor addresses

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**Procedure for ILS Population – Non-MARC Data**

1. Export data from Horizon or GEAC into tab-delimited file
2. Set up local MySQL database with fields equivalent to database tables in Aleph
3. Import tab-delimited files into database, moving data elements into correct fields for Aleph
4. Import from local database into Aleph database tables

**ILS Migration - The UT Experience**

- Labor intensive and time consuming; required extreme and exclusive focus
- Export -> import -> export -> import process used with non-MARC data took a number of iterations to get right
- Familiar formats made it relatively easy to see when the pieces fallen into the right places, a satisfying experience
- Internal workflows and some patron empowerment features (e.g. online renewal) were improved with one integrated system

**ILS Migration - The UT Experience (cont.)**

- One-time nature of the migration and familiarity with the data may have led to less innovation
- Indexing and display of MARC fields was mostly taken from previous system
- “We got it right” feeling persisted
- Didn’t have enough time to spend on the user experience side (the OPAC)
- Following completion of migration, changes that required reindexing were often postponed

**Toward Ongoing Migration and New Data Formats**

- UT has developed a number of ongoing processes and services moving data in and out of the Aleph system
- Load patron information with exports from campus LDAP system
- Export of invoices for ingest and processing in SAP
- SQL queries for custom reporting
- Newer, more modular systems require ongoing migration of data in less familiar formats

**The Link Resolver “Knowledge Base”**

- Emphasis of OpenURL link resolver software (SFX from Ex Libris at UT) is on the user experience - simplifying access
- Ongoing data updates are essential for linking accuracy
- Software providers collect and distribute large amounts of data from electronic resource vendors – an invaluable service
- Processes for updating the KnowledgeBase to reflect current subscription information are equally important

**Link Resolver KnowledgeBase (cont.)**

- Data elements in the KnowledgeBase are keyed to access
- Constant vigilance in keeping the KnowledgeBase updated, and different data formats, helps us think in new ways, e.g.:
  - What are the most important data fields to enable efficient and effective searching for journals?
  - What is the best way to express relationships between serial titles?
The “Next Generation” Discovery and Delivery System

- Another module with a focus on the user experience (Primo from Ex Libris at UT)
- Catalog data is “transformed”
  - MARC Export from ILS
  - Import / transformation into an XML format
- Other data sources, e.g., records from an OAI repository, can be added

“Next Generation” Discovery and Delivery (cont.)

- XML data elements are keyed to discovery and delivery, e.g.,
  - Facet fields for navigation of search results created from author, subject heading, classification, availability information, …
  - Dedup and FRBR fields to facilitate streamlined display of duplicate or “like” records
- “Rules” for data transformation are understandable and configurable
- Reindexing does not require system downtime

“Next Generation” Discovery and Delivery (cont.)

- Ongoing data migration, into new and configurable data format, encourages innovation, e.g.:
  - How much does “format” matter, and how does it play into faceted navigation?
  - New ways to bring authority data into the mix without having to browse an index

The Challenge of Ongoing Data Migration

- A challenge in the best sense of the word, fostering new thinking and innovation
- Requires procedures that are both rigorous and flexible
- More to look forward to on this front, as other, modular, systems come online at the UT Libraries (e.g., ERMS)

Thank you!

Libraries and Data an IU Perspective

Robert H. McDonald
Associate Dean for Library Technologies
Associate Director Data to Insight Center
NISO Webinar 11.11.09
Hello – Greetings - Welcome – Bonjour - Tag

- Tagging
  - #niso
  - #data
  - @mcdonald
- GoogleWave
  - with:public niso

Robert H. McDonald

OVERVIEW

- Institutional Background
- Data at IU
  - Discovery
  - Curation
  - Storage
  - Scale
- Data Futures
- Above Campus

Indiana University Libraries

- Indiana University
- Statewide Location, Indiana
- Large, Research Oriented Public University
  - 101,000+ students
- SIRSIDynix Symphony 3.2.1 Library Management System
  - 6.5 million items
- 9 Regional Campuses
- ILS Managed by Libraries/Enterprise Applications

DATA @IU

- Data Discovery
  - Bibliographic Data
- Data Curation
  - Local
  - Consortial
- Data Storage
  - Local
  - Consortial

DISCOVERY DATA

- SIRSIDynix Symphony Web OPAC
- WorldCat Local Discovery Interface
- Testing Ebsco Discovery Interface
- Mobile Discovery
  - Boopsie Mobile Search
  - MIT Mobile Framework (campus)
- Multiple Instances
  - Dspace – IU ScholarWorks
  - Open Journal System – IU ScholarWorks
  - Fedora (modern DLP infrastructure)
  - Legacy Digital Library Systems

LEGACY ILS

Public User Interface:
- Circulation
- Acquisitions
- Cataloging
- Serials
- Vendor-Based ePurchasing
- Vendor-Based Metadata Enhancement

Functional modules:
- Cataloging
- Serials

Data Stores:
- Staff Interfaces:
Legacy ILS + Current Management Tools

- Learning Mgmt./Campus Portal Feeds
- Proxy/VPN for eContent Access
- Federated Search/Advanced Discovery
- OpenURL Linking
- Electronic Resource Mgmt. System
- Unified Workflow Interface for Staff

Legacy ILS Functionality + eContent Module + Advanced Discovery Interface

Good Search – Decouples Discovery from ILS

- Raw MARC data
- Flat text files
- NextGen Search System/Faceted Search
- Web 2.0 Engine
- HTTP
- User Interface

IU DISCOVERY

- MIT MOBILE FRAMEWORK
- DATA APIs
- SAKAI
- IU KNOWLEDGEBASE
- IUCAT SEARCH

IU DISCOVERY MOBILE

- BOOPSIE
- MARC RECORD EXTRACT
- AUTOMATED UPDATES
- IU INTELLIGENT INFRASTRUCTURE

SCHOLARWORKS DISCOVERY MOBILE

- BOOPSIE
- DSPACE
- OAI HARVESTING
- AUTOMATED UPDATES
- IU INTELLIGENT INFRASTRUCTURE
DATA DELUGE

- As volume of digital scientific data increases so increases opportunities for data-driven science
- Funding agencies beginning to mandate that research data products be made publically available
  - "The National Science Foundation is committed to the principle that the various forms of data collected with public funds belong in the public domain."

DATA CURATION

- IU Scholarly Data Services
  - IU ScholarlyWorks Data - Publishing Services
  - Consortial Data Curation/Publishing (HathiTrust)
  - Consortial Data Curation (CIC Research File System)

IU SCHOLARWORKS DATA

- IU Scholarly Data Services

CONSORTIAL DATA - HATHITRUST

Indianapolis
Ann Arbor

Isilon OneFS Currently Supports up to 2.3 PB between Two Nodes

Two Node Federated Repository

CONSORTIAL DATA – CIC RESEARCH FILESYSTEM

- 7 Node Wide Area File System
  - Indiana University
  - Michigan State University
  - Ohio State University
  - Penn State University
  - University of Illinois
  - University of Iowa
  - University of Minnesota
- Fedora Curation Services
- GPFS-WAN – Global Parallel File System Wide Area Network
- SoFS – Scale Out File System

Diagram from IBM
Above-Campus Services: Shaping the Promise of Cloud Computing for Higher Education
Brad Wheeler and Shelton Waggener – Educause Review 44(6)

Discussion
All questions will be posted with presenter answers on the NISO website following the webinar:

Data, Data Everywhere: Migration and System Population Practices
Sponsored by Ex Libris

Questions?

http://www.polleverywhere.com/multiple_choice_polls/MTk1NzE4NTU1Ng