Communities of Knowledge: Creating and Connecting Resource Metadata

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We help libraries work better.

DATA. MANAGE. DISCOVER.

Collaboration, Community, and Connection. . .

- The idea of a knowledge base
- Motivating factors
- Some projects underway
- Connectivity building blocks
- Opportunities and challenges
- Your observations

Situation analysis

- E-resources = ~70% U.S. academic library collection spend
- U.S. academic library collections[1]
  - 158.7 million e-book holdings
  - 1.8 million e-reference sources and aggregation services
- The number of e-resources continues to grow exponentially, year over year.

[1] Phan, T., Hardesty, L., Hug, J., and Sheckells, C. (2011). Academic Libraries: 2010 (NCES 2012-365). U.S. Department of Education, Washington, DC: National Center for Education Statistics. Retrieved 3/4/2013 from http://nces.ed.gov/pubsearch.

The idea of a knowledge base

- Repository of (technical) answers
  - "How can I get database access from off campus?"
- Address book for e-resource look-up
  - At minimum: "Those titles appear in this database from that provider."
- Metadata + content management system
  - Data store, service platform, APIs, expert systems

What's a knowledge base for?

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Commercial knowledge bases

- For-profit and not-for-profit providers
  - E-resource metadata
  - Library holdings data
  - Software and services
    - e.g., discovery services, ERM, link resolvers
  - Varied levels of
    - Publisher relationship programs
    - Data updating and maintenance
    - Format and system interoperability
    - Data use policies

"Today, no freely available centralized database exists that comprehensively describes the e-holdings associated with library content packages."

- Marshall Breeding

Knowledge Base and Link Resolver Study: General Findings (May 1, 2012)

Why start a knowledge base project?

- Reasons expressed…
  - Get information "as soon as it's available"
  - Direct "control of our own data"
  - We can "save time and duplicative effort"
  - We can "help vendors better track our consortium's subscriptions"
  - "Librarians are the best suited" to do this
  - "Everyone can share in this information"

What are the goals of these projects?

- **Start local, go global**
  - Consortium, national, international initiatives
- **Community-driven**
  - Created, maintained, and supported
- **Open**
  - Reusable information, without restrictions

Projects underway: consortium: 2CUL

- Mellon-funded, Columbia and Cornell Universities, plus Ithaka
  - Focus:
    - Collective e-resource management
    - Descriptive metadata stored in a single, shared KB by 2015
  - Current status:
    - New round of funding, January 2013
    - "Phase 2" focus on combined technical services and additional cost savings

Projects underway: national: JUSTICE

- NII-backed, Japan Alliance of University Library Consortia for E-Resources (JANUL+PULC)
  - Focus:
    - Consortium license agreements
    - Building a national e-resources collection
    - E-resource management and discovery
  - Current status:
    - 500 potential participant institutions
    - Early discussions with publishers
    - Reaching out to JISC KB+

Projects underway: international: KB+

- JISC-funded, "community-driven", plus outside tech consultants
  - Focus:
    - Subscriptions and renewals (UK NESLi2 packages)
    - Interoperability to improve commercial knowledge bases
    - Self-sustaining subscription basis later in 2013
  - Current status:
    - Data model, provider files from 2011 and 2012
    - Partnering with Kuali OLE's GOKb

Projects underway: international: GOKb

- Mellon Foundation-funded, Kuali OLE "community-driven"
  - Focus:
    - E-resource management
    - Create trackable title-instance identifiers (TIPP)
    - Data sourcing from publisher web sites and in partnership with CUFTS
  - Current status:
    - Targeting e-serials from top providers
    - Partnering with KB+ for data model

Building blocks of connectivity

Creating and connecting metadata

Standards

- ✓ Identifiers (e.g., ISSN, ISBN)
- ✓ Data delivery (e.g., ONIX, SUSHI)
- ✓ Industry-driven (e.g., KBART, COUNTER)

Data Models

- ✓ Proprietary relational (e.g., KB+/GOKb)
- ✓ FRBR (Work>Expression>Manifestation>Item)
- ✓ LoC's BIBFRAME (Work>Instance, Authority, Annotation)
- ✓ Linked Data (RDF, 'triples', URIs)

Open Systems

- ✓ Creative Commons 0 (CC0) public domain license and others
- ✓ Open APIs

"The creation and maintenance of an e-content knowledge base requires **an ongoing investment** of both automated and manual processes to achieve reasonable levels of comprehensiveness, consistency, and correctness. It requires **a continual flow of information** from publishers and **significant effort** to enforce consistency, eliminate errors, and to ensure completeness."

- Marshall Breeding

Knowledge Base and Link Resolver Study: General Findings (May 1, 2012)

Opportunities and challenges

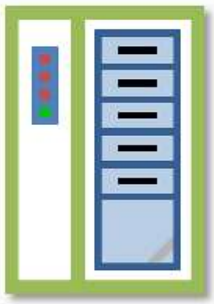
Identifying the community

- U.S. academic library staffing[2]
  - 88,943 full-time equivalent (FTE) staff
  - 26,706 FTE librarians
- A skilled community
  - E-resource librarians, serials specialists, catalogers, acquisitions librarians, bibliographers, selectors, systems librarians and others

[2] Phan, T., Hardesty, L., Hug, J., and Sheckells, C. (2011). Academic Libraries: 2010 (NCES 2012-365). U.S. Department of Education, Washington, DC: National Center for Education Statistics. Retrieved 3/4/2013 from http://nces.ed.gov/pubsearch.

Challenges of being "community-driven"

Average Academic Library



Maintaining
60,497 holdings

=

Time Spent

190 hours per month

$68,000 per year

Approximately $1 per holding per year*

*Serials Solutions calculation based on reported mid-sized academic libraries' experiences

Opportunities and challenges

Scope of work
Determining how much data is enough
ERM-only focus vs. ERM + discovery
Provider outreach
Nature of e-resource metadata
Ambiguous terms (e.g., database, package, aggregation, collection)
Controlled vocabulary maintenance and management
Complexity of serials (e.g., title splits)
Metadata change management
Quality
Publisher and aggregator data quality
The 'good enough' trade-off: accuracy vs. timeliness
Dealing with de/duplication

Opportunities and challenges

Sustainability
Motivating and empowering community participation
Staffing levels vs. current workload
Cultural change (e.g., trusting other librarians to create and maintain quality data)
Viability of the free-service business model
Standards
Levels of compliance (e.g., assigning and using identifiers)
Role of newly-created, proprietary identifiers and data models
Selecting and implementing interoperability standards
Rights and governance
Consortium relationships and packages
Understanding limits of disclosure and sharing
Managing 'community-driven' work

"Collective problems require collective action, which requires a shared vision."

– Association of Research Libraries

ISSUE BRIEF: 21st-Century Collections: Calibration of Investment and Collaborative Action

Thanks for joining the discussion!

Monitoring project progress

- 2CUL: http://2cul.org/
- JUSTICE (Japan): http://www.nii.ac.jp/content/justice_en/documents/JUSTICE-overview.pdf
- JISC KB+: http://www.jisc-collections.ac.uk/knowledgebaseplus/
- Kuali OLE® GOKb: gokb.org
- FRBR: http://www.ifla.org/publications/functional-requirements-for-bibliographic-records
- BIBFRAME: http://www.loc.gov/marc/transition/pdf/bibframework-10312011.pdf and www.bibframe.org
- Linked Data: http://www.w3.org/standards/semanticweb/data
- Marshall Breeding's Knowledge Base and Link Resolver Study: General Findings (May 1, 2012): http://www.kb.se/dokument/knowledgebase_linkresolver_study.pdf
- NISO Bibliographic Roadmap Development Project: http://www.niso.org/topics/tl/BibliographicRoadmap/