OpenURL Implementation: Link Resolution That Users Will Love

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OpenURL Implementations

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OpenURL Implementation:
NISO Z39.88

- **OpenURL 0.1**
  - Introduced with the ExLibris SFX resolver and publication of the ‘SFX’ OpenURL specification.
  - Addressed the appropriate copy problem primarily for electronic licensed content in libraries.
- **OpenURL 1.0  Z39.88**
  - Approved NISO standard April 2005, commonly known as OpenURL 1.0.
  - Defines a framework architecture and a framework registry allowing new genres and new descriptions of existing genres.
  - The OpenURL registry is maintained by the OpenURL Maintenance Agency and allows for the creation of new OpenURL framework applications.

  - Note: OpenURL does not define the response of the Resolver.

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The “ContextObject” contains...

- **Administrative**
  - Version control, character encodings, timestamp, etc.
- **Referent**
  - Item being referenced. E.G. bibliographic reference in full text article.
- **Requester**
  - “User” making the request.
- **Provider**
  - Service creating the link. E.G. where the user found the reference.
- **ReferringEntity**
  - The item which contains the reference. E.G. the article in which the bibliographic reference was found.
- **ServiceType**
  - The target of the link. E.G. the link server of the user’s institution.
- **Resolver**
  - The desired services from the Resolver. E.G. Full text, ILL, Abstract, etc.

From Oliver Pesch presentation:
http://www.niso.org/news/events/niso/past/MS-2003_workshop/PeschOpenURL.ppt

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OpenURL Implementation:
The ContextObject

- The “information package”
- At the heart of the standard
- Describes a referenced item and the context within which it is being referenced
- Allows independence from transport method
- Formalizes expression of context

From Oliver Pesch presentation:
http://www.niso.org/news/events/niso/past/MS-2003_workshop/PeschOpenURL.ppt

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OpenURL Implementation:
The NISO OpenURL Registry

- The NISO OpenURL registry resides at http://openurl.info/registry and is maintained by the maintenance agency.
- For each ContextObject the following must be registered:
  - Character Encodings (one or more) UTF-8, Latin-1, etc.
  - Serializations (one) K rij, XML.
  - Constraint Languages (one) MTX, XML schema
  - ContextObject Formats (one) KEV, XML.
- For each entity the following may be registered:
  - Namespaces (zero or more) info: lccn:, urn:ISBN:, ldap:
  - Metadata Formats (zero or more) book, journal, etc.
- For transporting ContextObject Representations:
  - Transports (one or more) by-reference, by-value, inline (all HTTP or HTTPS)
- For each OpenURL application:
  - Community Profiles (one) SAP1, SAP2

From Oliver Pesch presentation:
http://www.niso.org/news/events/niso/past/MS-2003_workshop/PeschOpenURL.ppt
Community Profiles

• A Community Profile defines the core characteristics of an Application as a list of Registry entries.
• This list contains Registry entry Identifiers for:
  - One ContextObject,
  - zero or more metadata formats,
  - zero or more namespaces to describe identifiers,
  - and one or more transports to specify how ContextObjects are transported.

• Note: Registry entries are versioned by date, and new versions require submitting new registry entries - rather than updating the existing entry.

The Maintenance Agency

• OCLC was awarded the OpenURL maintenance agency in 2006.
• The MA is guided by a standing NISO OpenURL Advisory Committee.
• The maintenance agency:
  – Allows the registration of new registry entries to the NISO OpenURL registry.
  – Maintains Implementation Guidelines.
  – Corrects mistakes.
  – Maintains the openurl@oclc.org public listserv.
  – Supports educational initiatives and promotional activities.
  – Includes a permanent review panel and encourages community and public review.
  – Rules for submittal can be viewed at:
  – Contact for new submittals/questions: openurlagency@oclc.org

Gate 1 – Maintenance Agency Review: This is the review for technical correctness of the submittal conducted by the Maintenance Agency. This review should take 1-4 weeks depending on the size and complexity of the submittal. The submitter will be notified about the outcome of the review. Successful submittals will automatically enter the next gate.

Gate 2 – Review Panel Review: This is a review by the standing Review Panel and community members specified by the submitter. This review is expected to take from 1-2 months. The MA will set the time period based on size and complexity of submittal. The submitter will be notified about the outcome of the review. Successful submittals will automatically enter the next gate.

Gate 3 – Public Review and Trial Period: This is the public review and trial period combined. This review will take from thirty days to six months, as specified by the standing review panel. The length of the trial period will be based on size and complexity of submittal. The submitter will be notified about the outcome of the Public Review and Trial Period.
San Antonio Level 1 Community Profile 2004 (SAP1)

- **Status**: Official, introduced with Z39.88 standard in 2005.
- **Description**: The San Antonio Level 1 Community Profile, built around the Key/Encoded-Value ContextObject Format, has choices for Metadata Formats and Namespaces that meet the needs of the scholarly information community.
- SAP1 can be implemented as a plain URL.
- Supports the following metadata formats: Journals, Books, Patents, Service Types for the Scholarly Community, and dissertations.
- Supports many identifiers such as doi, pubmed, lccn, oclcnum, issn, isbn, nbn, astrophysics bibcode, and cnri handles, among others.
- SAP1 is the current state of the art for library systems today.

San Antonio Level 2 Community Profile 2004 (SAP2)

- **Status**: Official, introduced with Z39.88 standard in 2005.
- **Description**: The San Antonio Level 2 Community Profile, built around the XML ContextObject Format, has choices for Metadata Formats and Namespaces that meet the needs of the scholarly information community.
- SAP2 must be implemented with XML.
- Supports the following metadata formats: Journals, Books, Patents, Service Types for the Scholarly Community, and dissertations.
- Supports many identifiers such as doi, pubmed, lccn, oclcnum, issn, isbn, nbn, astrophysics bibcode, and cnri handles, among others.
- SAP2 is not commonly used today.

Dublin Core Community Profile 2004

- **Description**: The Dublin Core Community Profile is built around the Key/Encoded-Value ContextObject Format, has choices for Metadata Formats and Namespaces that meet the needs of the Dublin Core community.
- DDCP may be supported with a plain URL.
- Supports the Dublin Core metadata format.
- Supports some identifiers: urn:, http:, mailto:, ftp:, and ldap:.
- DDCP is used by a limited number of applications.

Request Transfer Message Community Profile 2007

- **Status**: Passed Review stage, now in Trial Use.
- **Description**: The RTM Community Profile is built around the XML ContextObject Format, has choices for Metadata Formats and Namespaces that meet the needs of direct requests for loan, copy, access to lookup, or digitization of an item.
- RTM-2007 must be implemented with XML.
- Supports the XML metadata formats that SAP2-2007 does plus: RTM specific metadata formats for referent, requester, and service type, and external metadata formats for ISO 20775, ISO 25577, MODS, and ONIX book.
- Supports many identifiers such as doi, pubmed, lccn, oclcnum, issn, isbn, nbn, astrophysics bibcode, and cnri handles, among others.
- Although some organizations are working on this, no trial use results have been reported to the maintenance agency.
OpenURL Implementation: Request Transfer Message

- COinS: Context Object in SPAN (2005). Allows linking to an OpenURL resolver from any COinS enabled website (HTML), e.g., Wikipedia.
- SFX API. XML response from resolver.
- OCLC OpenURL Resolver Registry (2005) and OCLC WorldCat Registry (2007).
- RTM submital 2007 from Janifer Gatenby of OCLC. Standard interface for direct requests for consortial borrowing systems.
- XML interface from WorldCat Link Manager to WorldCat Local (2008).
- JPEG2000 service type metadata format (2008). Ryan Chute and Herbert Van de Sompel at Los Alamos. Requests services for jpeg such as mime types, rotation, resolution, and region. Release with D-Lib article in September.
WorldCat Registry and OpenURL Gateway

Joanna White
WorldCat Registry Product Manager

Before Resolver Registry

After Resolver Registry
Why Registries?

OpenURL Implementation: Why Registries?

Current state
- “Closed” registries of essentially the same library data
- Inefficient, costly, libraries asked to update each vendor separately

What we want to do
- Centralize and decrease time spent on redundant tasks
- Put library services closer to web users
- Develop web services for library partners and vendors

WorldCat Registry

www.worldcat.org/registry/institutions

- A global directory of libraries, their locations, and the services they provide
- Centralized data essential for delivering content and services more efficiently on the Web

WorldCat Registry Example

Georgia Institute of Technology
(http://www.worldcat.org/registry/institutions/5090)

OpenURL Implementation: WorldCat Registry Example

Data Included

- One entry per physical library location
  - Down to branch/departmental level
- Each entry includes:
  - Geographic and electronic location
  - IP Addresses
  - Services – OPAC, OpenURL, Virtual Reference
  - People – contacts
  - Administrative data
  - Unique identifier & “crosswalks”
  - Relationships and Affiliations

It’s good to have URL links ☝️
Comprehensiveness

Welcome slide
OpenURL Implementation:
Comprehensiveness

• Over 100,000 Registry records
  – Comprehensive for US Academic and Public to branch level
  – Increasing comprehensiveness around the world
  – Library does not need to be an OCLC member to be in the Registry

• Over 1,700 records with at least one OpenURL resolver
  • All major US Academic and ARL institutions
  • Major vendors and home grown
  • Working with OpenURL vendors to register on behalf of libraries

How it all works.

Welcome slide
OpenURL Implementation:
How it all works.

OCLC makes information available for content providers via OpenURL Gateway

Researcher searching the content receives library services

Web Services Available Today
(http://www.worldcat.org/affiliate/default.jsp)

OpenURL Implementation: Partner’s Perspective

Web Services Available Today
(http://www.worldcat.org/affiliate/default.jsp)

Internet Registry Details
Search
Institution Details
Search
OpenURL Gateway

OCLC OpenURL Gateway

• Free for non-Commercial Use
• Easy to Implement:
  1. Replace Static OpenURL with “Gateway” URL
     <Resolver Base URL>?<Item Details> becomes this:
     <http://worldcatlibraries.org/registry/gateway>?<Item Details>
  2. Gateway queries based on incoming IP and provides:
     User’s Library resolver or WorldCat Libraries
1. Sign in to the Registry at: www.worldcat.org/registry/institutions
2. Create, review or edit your institution’s Profile
3. Maintain information in Registry, especially URLs to your services

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IMPROVING THE OPENURL:
BETTER SERVICE FOR PATRONS THROUGH BETTER DATA TRANSFER AND MORE ACCURATE DATA

Peter McCracken KBART co-chair
NISO Webinar 21 August 2008
Today’s Agenda

• OpenURL Overview
  – Positives and negatives
• KBART: Reviewing Problems & Seeking Solutions
  – KBART background, goals, membership
• Proposed Solutions
  – Improve knowledge of OpenURL, enhance implementation, improve data
• KBART Deliverables

The Measure of Success

• Better access for patrons
  – Fewer false positives and false negatives
• Best-case scenario:
  – A patron is seeking an article; her library offers access to it through exactly seven online resources
  – The OpenURL resolver returns exactly seven accurate links

OpenURL in Real Life

• The Positives – it gets you to content you would not otherwise have found
  – It’s a great leap forward in library services
  – It’s fairly straightforward; it’s not incredibly complicated
• The Negatives – it doesn’t get you to content as easily as it should
  – Inaccurate data leads to bad links
  – Incorrect implementation doesn’t transfer data properly
  – Lack of knowledge means some vendors aren’t using it

KBART: A History

  – Provided ideas on improving usage and accuracy
  – Recommended follow-up to address some specifics
• NISO partnership to broaden reach and include US audience
KBART: An Introduction

- Knowledge Bases And Related Tools
- UKSG and NISO collaborative project
- Get better data for everyone –
  - Those who provide data (publishers, aggregators)
  - Those who process data (link resolvers, ERMs, etc.)
  - Those who present data (libraries, consortia)
- All for THOSE WHO USE DATA – library patrons
- Ensuring timely transfer of accurate data to knowledgebases, ERMs, etc.

Who’s in KBART?

- Core working group chaired by me (Serials Solutions) and Charlie Rapple (TBI Communications; formerly Ingenta)
  - Link resolver/ERM suppliers – Ex Libris, Openly/OCLC, Serials Solutions
  - Publishers – Taylor & Francis, SAGE, British Medical Journal
  - Subscription agents/aggregators – Swets, EBSCO, Ingenta, Credo
  - Consortia – SCEL, California Digital Library
- Monitoring group
  - More of these plus other related groups, e.g., NASIG
  - Anyone can join monitoring group: www.niso.org/lists/kbart_interest/

OpenURL in Real Life

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KBART: Focusing on the Negatives

- “OpenURL’s Negatives”
  - Inaccurate data leads to bad links
  - Incorrect implementation doesn’t transfer data properly
  - Lack of knowledge means some vendors aren’t using it
Solving the Negatives: Lack of Knowledge

- Some content providers simply aren’t aware of what OpenURL does and why it benefits them
  - Education & advocacy
- Follow recommendations of Culling/SIS report; provide useful information to those content providers
  - How to implement correctly
  - Offer contacts for those needing assistance

Solving the Negatives: Incorrect Implementations

- Help content providers determine what is working, and what isn’t
  - Cornell project to focus on source OpenURLs
  - Identify correct and incorrect implementations
  - Give opportunity for vendors to grade selves
- Offer more and better examples of OpenURL
- Standardize transfer of data within and among supply chain participants

Solving the Negatives: Inaccurate Data

- How do we handle incorrect data?
  - Grading? Policing? Shaming?
  - Biggest and most difficult problem to solve
- Highlight to content providers how important completely accurate data is to their end users
  - Consider the ‘false positive’: arrrgh, that’s frustrating…
  - Consider the ‘false negative’: much, much worse: how would you ever know?

KBART Deliverables

- Create a report that provides general guidance on problematic issues
  - Data problems
  - Incorrect implementation
  - Limited knowledge
- Offer best practices guidelines for how to effectively transfer accurate data among parties
- Provide better understanding of supply chain
KBART Timeline

- This time next year
  - Present at UKSG, hopefully also at NASIG, ACRL, etc.
- Then... Phase II?
  - May go on to create a standard
    - Will need to consider, if many feel it’s appropriate
    - Non-textual content

Questions, Challenges

- Figuring out how to deal with data accuracy questions
- Ensuring uptake among smaller or less-committed content providers
- Providing ongoing support for new participants

Thanks!

- http://www.uksg.org/kbart
- http://www.niso.org/workrooms/kbart

- Peter McCracken (NISO co-chair)
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    - Co-founder & Director for Research, Serials Solutions
- Charlie Rapple (UKSG co-chair)
  - charlie.rapple@tbicomunications.com

Questions?

Questions and answers will also be posted to the NISO website following the webinar.
Thank you!

Thank you for joining us today. Please take a moment to fill out the brief online survey.

We look forward to hearing from you!