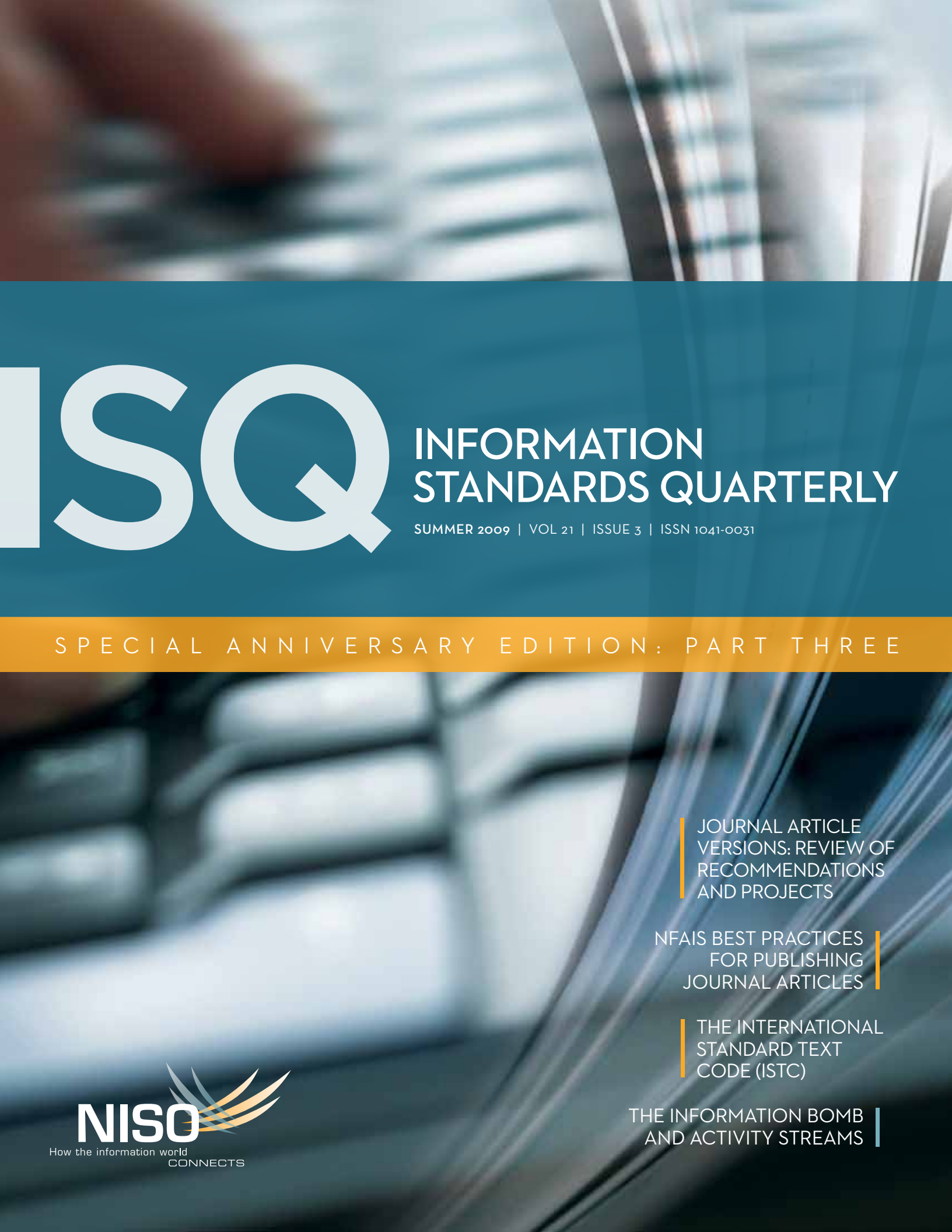

ISQ
INFORMATION STANDARDS QUARTERLY

SUMMER 2009 | VOL 21 | ISSUE 3 | ISSN 1041-0031

SPECIAL ANNIVERSARY EDITION: PART THREE

JOURNAL ARTICLE VERSIONS: REVIEW OF RECOMMENDATIONS AND PROJECTS

NFAIS BEST PRACTICES FOR PUBLISHING JOURNAL ARTICLES

THE INTERNATIONAL STANDARD TEXT CODE (ISTC)

THE INFORMATION BOMB AND ACTIVITY STREAMS

NISO
How the information world CONNECTS

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ISQ

SUMMER 2009 | VOL 21 | ISSUE 3 | ISSN 1041-0031

NISO
How the information world CONNECTS

INFORMATION STANDARDS QUARTERLY (ISQ) is a publication by the National Information Standards Organization (NISO). ISQ is NISO's print and electronic magazine for communicating standards-based technology and best practices in library, publishing, and information technology, particularly where these three areas overlap. ISQ reports on the progress of active developments and also on implementations, case studies, and best practices that show potentially replicable efforts.

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Todd Carpenter

FROM THE PUBLISHER

One of the comments that NISO receives regularly is: "What happens with standards once they are published?" The work of standards organizations and working groups does not end when consensus is reached and the documents are published. The difficult work of implementation goes on throughout the life of a standard. Encouraging adoption of voluntary consensus standards in the community often requires significant education, hand-holding, and some cajoling to get all the key players to buy into the process. In the information supply community, it is ultimately the end users that provide the coercive force to drive adoption by the suppliers.

This issue highlights several projects that are in the implementation stage of their lifecycle, where the development has been completed and the standard or recommendation is in the earliest phases of adoption. After many years of work, the International Standard Text Code (ISTC) has been published by ISO. The International ISTC Agency, responsible for registration and maintenance activities, is in full implementation and promotion mode. Andy Weissberg of Bowker, one of the organizational partners of the ISTC Agency, explains the standard and what is being done to support its use and adoption in the community. Although the NISO Journal Article Versions recommendations were published last year, it is not the only standard addressing this issue. Jones & Plutchak point out that there is more in common than in conflict in the two "versions." This work also dovetails with another set of recommendations produced by NFAIS on Journal Article publication, which is described by O'Neill & Lawlor. These two articles are just one effort to encourage adoption of the respective recommendations. Finally, Weinberg's report on the IFLA *Guidelines for Multilingual Thesauri*, rounds out the coverage of published work needing consideration and adoption.

Of course, there is need for continued development work beyond the attention that needs to be paid to adoption. NISO's Discovery to Delivery Topic Committee is managing several NISO projects still in the development stage as O'Brien and Shearer describe. And our conference reports section highlights needs in the areas of measurement, e-books, and resource sharing that need standardization as well as efforts that are already underway in those arenas.

Finally, we continue our year-long series on the history of NISO as part of celebrating our organization's 70th anniversary. In this issue, we complete our NISO timeline, bringing it up to date with NISO's recent changes and accomplishments. The final installment in our next issue will wrap up the series with a view of NISO's future. Part of the future work will be a continued focus on adoption and compliance. Mindful of the effort that has brought us to this point and the implementations still before us, we will also need to explore where the changes in the information landscape are pushing the community and how this will also require new best practices, and standards.

In the meantime, enjoy this issue and consider how best to apply the standards described here in your own environment.

Todd Carpenter | *NISO Managing Director and ISQ Publisher*

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NISO CELEBRATES 70 YEARS

SPECIAL ANNIVERSARY EDITION: PART THREE

The National Information Standards Organization turns 70 this year and its publication, *Information Standards Quarterly* (ISQ) has just passed its 20th birthday. In the first two issues of ISQ this year, we shared some milestones in NISO's history from the inception of Committee Z39 in 1939 to NISO's incorporation in 1982 through 1997 when the ISO Technical Committee 46, for which NISO is the U.S. administrator, reached its 50 year anniversary.

In this issue, we continue the timeline to the present. In the next issue of ISQ, we will look ahead to NISO's future.

2000

NISO collaborates with the Library Binding Institute to develop Z39.78, *Library Binding*.

NISO collaborates with the International DOI Foundation to publish Z39.84, *Syntax for the Digital Object Identifier.*

Example DOI:
doi: 10.3789/isqv21n1.200904

JANUARY 1999

NISO standards and technical reports made available as free electronic downloads.

SEPTEMBER 2001

Z39.85, *The Dublin Core Metadata Element Set*, is published in collaboration with the Dublin Core Metadata Initiative.

2002

Z39.86, *Specifications for the Digital Talking Book (DTB)* is published.

JANUARY 2005

The *Library Statistics Data Dictionary* (Z39.7-2004) becomes NISO's first online standard.

APRIL 2005

Z39.88, *The OpenURL Framework for Context-Sensitive Services* is published.

Recommended Practice series is launched with three metasearch publications.

SEPTEMBER 2003

NISO takes over management of the IMLS publication, *A Framework of Guidance for Building Good Digital Collections*

OCTOBER 2004

Newsline, NISO's e-newsletter is launched.

NISO hosts 31st TC46 plenary meeting in Washington, D.C.

MAY 2006

NISO holds first webinar: Introduction to SUSHI

SEPTEMBER 2006

Todd Carpenter becomes NISO's Managing Director.

JANUARY 2007

Karen Wetzel becomes NISO's first Standards Program Manager.

JULY
2007

NISO announces new governance structure with Architecture and Topic Committees.

JANUARY
2008

ISQ becomes full-fledged magazine and an Editorial Board is formed.

APRIL
2008

New website and new collaboration tools for working groups are launched.

NOVEMBER
2008

Online community version of 3rd edition of *A Framework of Guidance for Building Good Digital Collections* is created with support from IMLS.

JANUARY
2009

Chairman's Initiative established; Board Chair, Oliver Pesch, selects Single Sign-on Authentication as his initiative.

1999–2009

Look for a discussion of NISO's future in the next issue of ISQ.

OCTOBER
2007

Z39.93, *The Standardized Usage Statistics Harvesting Initiative (SUSHI) Protocol* is published.

FEBRUARY
2008

First Thought Leader meeting is held, on Institutional Repositories

RP-7, *SERU: A Shared Electronic Resource Understanding* is published along with a registry of users.

MARCH
2008

NISO registers its first continuous maintenance standard with ANSI: Z39.7.

MAY
2008

NISO becomes Secretariat for TC46/SC9, Identification and description.

AUGUST
2008

Release 3 of COUNTER *Code of Practice* requires support for SUSHI in order to be compliant.

JUNE
2009

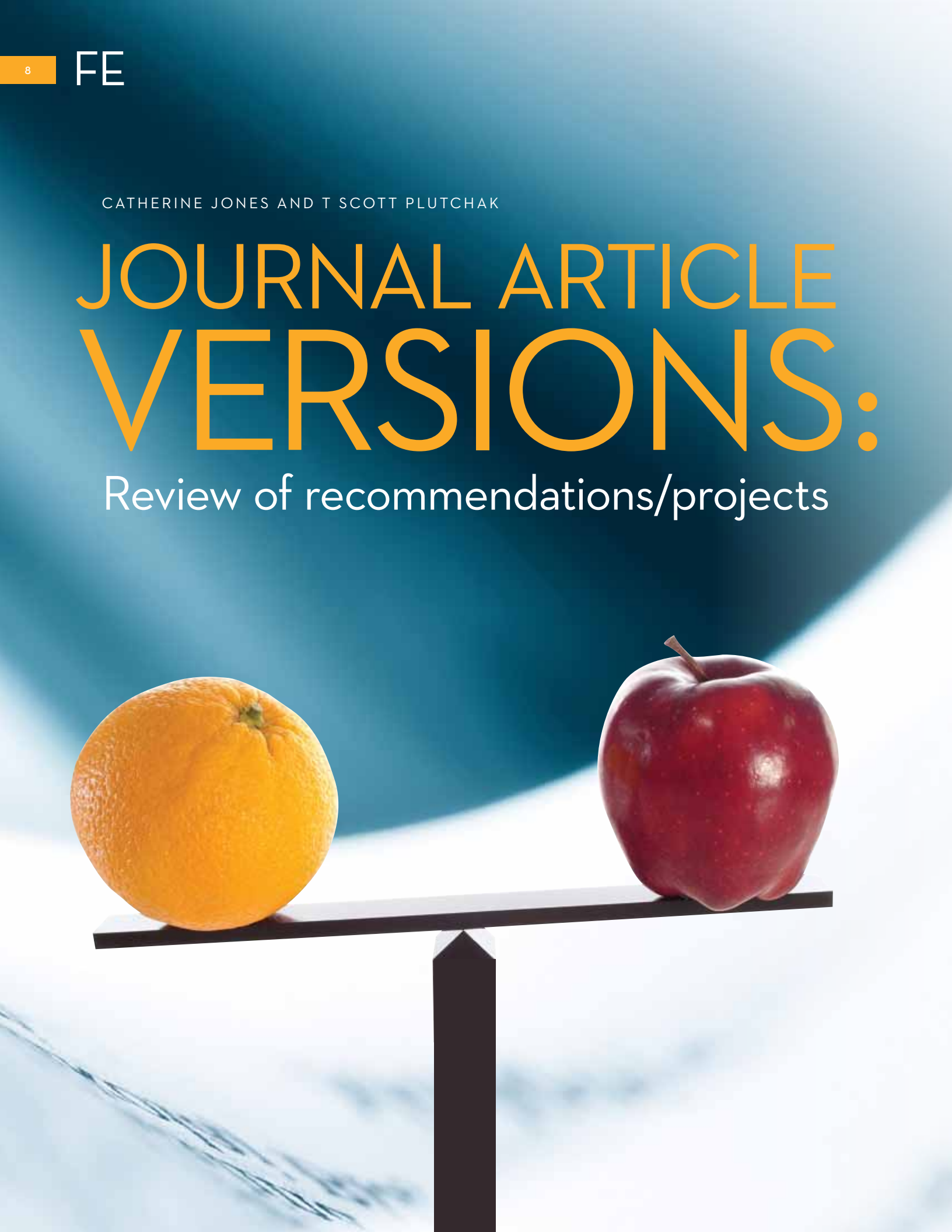
Streamlining Book Metadata Workflow white paper jointly published with OCLC.

doi: 10.3789/isqv21n3.200901 | FE |

CATHERINE JONES AND T SCOTT PLUTCHAK

JOURNAL ARTICLE VERSIONS:

Review of recommendations/projects



A journal article has always had more than one version as it goes through the process of an author committing it to paper, submitting it to a journal, being edited, and then published. The changes in technology such as word processing and the internet have made these different versions more visible to the wider community beyond the author and publisher.

As these versions become more prevalent, the ability to distinguish and identify the differences becomes harder. In a print world, a pre-print would have been labeled as such and would have had some information about the journal it was submitted to in it. This is not so true in the digital age. At the same time, the differences in nomenclature between and within the stakeholder groups have led to confusion for the wider public—for example, what does the term "post-print" really mean?

In an attempt to bring clarity and explicit understanding to scholarly works nomenclature, there have been several different projects in the last couple of years to explore the subject and to produce some recommendations. These are described and compared below.

Journal Article Versions (JAV)

The NISO/ALPSP working group on Journal Article Versions was formed in 2005 and the recommendations were published in April 2008. The group consisted of representatives from a number of publishers and libraries. (Both of the present authors served as members of the Technical Working Group). The charge was to propose a suggested naming convention for journal articles that could be incorporated into the metadata.

The group decided to take an approach based on the workflow and thus the format of the version is not considered. The stages named should be able to be easily identified, although some of them refer to an iterative process. There was a conscious decision to remain at a high level which is applicable to many stakeholders rather than to go into great detail.

The group developed use cases to explore the potential issues around journal article versions and following from this work developed a terminology set:

Author's Original – A version of a journal article that is considered by the author to be of sufficient quality to be submitted for review by a second party. This review may be prior to any formal review for publication. The author accepts full responsibility for the article. It may have a version number or datestamp. Content and layout is as set out by the author.

Submitted Manuscript Under Review – A journal article that is under formal review by a recognized publishing entity that will ultimately pass judgment on whether the article will be accepted for publication. It may have a version number or date stamp. Content and layout follow publisher's submission requirements.

Accepted Manuscript – The version of a journal article that has been accepted for publication in a journal. A second party (the "publisher": see "Version of Record" below for definition) takes responsibility for the article. Content and layout is as submitted by the author.

Proof – A version of a journal article that is created as part of the publication process. This includes the copy-edited manuscript, galley proofs (i.e., a typeset version that has not been made up into pages), page proofs, and revised proofs. Some of these versions may remain essentially internal process versions, but others are commonly released from the internal environment (e.g., proofs are sent to authors) and may thus become public, even though they are not authorized to be so. Content has been changed from Accepted Manuscript; layout is the publisher's.

Version of Record – A version of a journal article that has been made available by any organization that acts as a publisher by declaring the article "fit for publication." This includes any "early release" articles that are formally identified as being published.

Corrected Version of Record – A version of the Version of Record of a journal article that has been amended in some way to correct errors.

Enhanced Version of Record – A version of the Version of Record of a journal article that has been updated or provides additional information.

VERSIONS

The VERSIONS Project was a JISC funded project whose charge was to undertake a user requirements study and investigate the need for standards for versions of eprints. It ran from 2005-2007 and was led by the London School of Economics and Political Science in association with the Nereus consortium of European Research Libraries in Economics.

The project developed twelve scenarios exploring the areas around the reader's point of view, such as location of versions of scholarly works and choosing versions to use; and around the author's point of view, such as labeling of important versions, understanding of copyright statements, and coordinating the act of writing a work with others.

The project surveyed users in a target group of economics and most respondents came from this area. The key findings were that 59% of the respondents produce four or more different types of research output from a typical project; researchers tend to keep copies of journal articles at

CONTINUED »

significant points in the publishing process. Respondents felt it was important to be able to identify which version was the published one, versioning sequence (is this one older or newer than that one), and standardization on the date of completion. The project also interviewed experts in the field and the top three versioning issues to be addressed were: ease in locating and identifying published versions, trust in the version at hand, and being clear about the difference between multiple versions. The VERSIONS team suggested some solutions and the top three were: standard indicator to show this is the latest version, linking to the published version from others, and standard taxonomy for the scholarly work life cycle.

From these surveys, the project team developed a VERSIONS Toolkit. This outlined the VERSIONS terminology and also provided some guidance to users on the general issue of versioning. Terminology suggested was:

- **Draft** – An early version circulated as work in progress.
- **Submitted version** – The version submitted to the journal for publication.
- **Accepted version** – The author-created version that incorporates referee comments and is the version accepted for publication.
- **Published version** – The publisher-created published version.
- **Updated version** – A version updated since publication.

It is clear from the description of the terms, taken directly from the Toolkit, that the process is described from the author's point of view with the versions only describing ones where the author has made the changes rather than when the publisher has made them. The author may also have versions that were generated by publisher processes such as copy-editing, etc.

The work on the VERSIONS taxonomy has been taken up by the UK repository community and is being used in the eprints software to be able to define the terms used for scholarly works within the software.

VERSIONS survey respondents felt it was important to be able to identify which version was the published one, versioning sequence, and standardization on the date of completion. The top three suggested solutions by the team were: standard indicator, linking to the published version from others, and standard taxonomy for the scholarly work life cycle.

NFAIS Best Practices for Publishing Journal Articles

The National Federation of Advanced Information Services (NFAIS™) approaches the questions of version control from a slightly different context. The burgeoning practice of releasing journal articles on a case-by-case basis, often with the intention of replacing them with a final version at a later date, led to the creation of an NFAIS Working Group in late 2007 to establish best practices for publishing such articles, as well as for abstracting and indexing them. Their report was released in February of 2009. [See the article on page 12 for more on this report.]

Much of the NFAIS report focuses on such things as identification of specific citation elements that need to be included, clearly indicating changes that occur over time. Section 3 of the report explicitly addresses "Version Management."

Rather than recommending specific terminology to use in identifying different versions, this section of the report addresses the substantive concerns that need to be addressed when determining variations among articles. Considerable attention is paid to the issues presented when dealing with corrections, retractions, or replacements/removals of articles, all of which need to be carefully tracked in order to maintain the integrity of the scholarly record.

Version Identification Framework (VIF)

The Version Identification Framework (VIF) project was a JISC funded project which ran from 2007–2008 with a charge to produce a framework for identifying versions of digital objects in general. The project team was made up of staff from London School of Economics, Science and Technology Facilities Council (STFC), and University of Leeds. The project identified five key pieces of versioning information needed to distinguish between versions:

- **Defined dates** – Not only a date, but an explicit statement of what the date represents, for example, it could be the completion date after which the item was submitted to a journal.
- **Identifiers** – Assigned during the process, for example a DOI or a repository handle.
- **Version numbering** – Explicit information on the version contained either within the digital object or as part of the filename.
- **Version labels or taxonomies** – This is where the JAV or VERSIONS work could be used. At the time of writing the VIF team acknowledged that there wasn't a well adopted standard for scholarly works terminology.
- **Text description** – Provided by the author, it is often the best way of identifying how a particular version differs from another.

The VIF project recommended that this type of versioning information be embedded within the digital object and suggested using techniques such as file properties, coversheets, filenames, and watermarks to achieve this.

TABLE 1: Comparison of JAV and VERSIONS terminology

JAV	vs.	VERSIONS
Author's Original	→	Draft
Submitted Manuscript Under Review	→	Submitted Version
Accepted Manuscript	→	Accepted Version
Proof	→	–
Version of Record	→	Published Version
Corrected Version of Record	→	Updated Version
Enhanced Version of Record	→	

Both projects have attempted to find more neutral terms without a lot of pre-existing "baggage." There are clear definitions and the differences in terms, name, and number can be ascribed to the context of the project and the authors involved.

Comparison of Terminology

Neither the NFAIS or VIF projects make specific recommendations for versioning terminology, although the issues that they raise are compatible with both the NISO JAV and JISC VERSIONS recommendations. Table 1 compares the terminology recommended by those two. Both projects have attempted to find more neutral terms without a lot of pre-existing "baggage." There are clear definitions and the differences in terms, name, and number can be ascribed to the context of the project and the authors involved. NISO JAV was working in a context of journal publishing while the VERSIONS project was working in the context of Institutional Repositories.

Because of this difference in context, the JAV group felt that it was important to identify what constitutes the Version of Record. Where the VERSIONS project recommends simply indicating that an item has been published, the JAV group felt that this was too ambiguous a term, since "publishing" now occurs in so many contexts. Identifying Version of Record indicates that this is the official version that a publishing entity is taking responsibility for.

Similarly, identifying the Proof was deemed important, since some publishers may consider their "early release" articles to be Proof versions, while others will determine that the "early release" article is, indeed, the Version of Record.

Finally, the JAV group recognized that future changes to a published Version of Record may be qualitatively of two different kinds—those changes that simply make corrections that might otherwise have been caught during the prepublication process, and those changes that include additional or new data that present more substantive changes to the original Version of Record.

In any case, it is important to move away from the use of terms such as pre-print and post-print which have such ambiguous definitions in the digital world and may mean substantively different things to different communities.

Conclusions

In a world of instantly accessible multiple versions, it is important for readers to easily identify what they have retrieved and for them to then make their own decisions of whether the retrieved version is fit for their purpose. It is not up to the authors, publishers, or institutional repository managers to make this decision for the reader but instead they need to ensure the versions are clearly sign-posted.

| FE | doi: 10.3789/isqv21n3.200902

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RELEVANT LINKS

Journal Article Versions (JAV) Recommended Practice
www.niso.org/publications/rp/RP-8-2008.pdf

JAV Working Group Workroom
www.niso.org/workrooms/jav

Learned Publishing article on JAV project (by Cliff Morgan)
http://www.ingentaconnect.com/content/alpsp/lp/2008/00000021/00000004/art00003

VERSIONS Report
www.lse.ac.uk/library/versions/

NFAIS Best Practices for Publishing Journal Articles
www.nfais.org/Best_Practices_Final_Public.pdf

Version Identification Framework
www.lse.ac.uk/library/vif/

JILL O'NEILL AND
BONNIE LAWLOR

NFAIS BEST PRACTICES FOR PUBLISHING JOURNAL ARTICLES

Early in 2009, the members of the National Federation of Advanced Information Services (NFAIS™) approved for release a document entitled *Best Practices for Publishing Journal Articles*. The Best Practices document is a set of recommended behaviors that may be adopted by content providers to ensure uninterrupted access to formal scholarly content as service models shift from printed aggregations of articles to one in which articles are published and made accessible in a real-time, digital environment.

As might be expected, the transition is creating concerns for journal publishers and indexing services alike, such as:

- Determining which version (print or electronic) of an article should be considered the definitive version of record, a concern of importance to publishers, indexing services, librarians, and researchers.
- Recognizing when an individual journal "issue" is considered to be complete, a consideration important to discovery services in ensuring comprehensive indexing of a publication as well as to libraries in ascertaining receipt of all published content for which they have paid.
- Ensuring accuracy of citation data, citation indexing, and linking between sources—critical in preserving the accuracy of the scientific record, for navigation in the digital environment, and for measuring the effectiveness of research dollars spent.

Because content providers and research libraries share concerns about the quality of service delivered to the research community if appropriate measures were not commonly adopted, the NFAIS membership formed a Working Group to develop meaningful guidelines in the interests of uninterrupted access to and consistent presentation of high-quality research materials.

NFAIS Background

To make clear the range of organizations and research libraries working together in this initiative, it might perhaps be useful to offer some background on NFAIS itself.

After World War II there was an increased interest in scientific and technical information as a means toward the general welfare and prosperity of the global community.

Maintaining the flow of high-quality scientific information would provide a competitive edge for the United States. So in 1958, President Eisenhower directed the National Science Foundation to ensure the availability of indexing, abstracting, translation, and other services—services that would lead to a more effective dissemination of scientific information. Intense national focus was on the abstracting and indexing services (what we now think of as discovery services) and their role in facilitating the dissemination of scientific research. Printed publications of abstracts were produced by such societies and government agencies as the American Chemical Society, the American Psychological Association, the National Library of Medicine, and the United States Department of Energy. These and eleven other organizations (a full list of which is available at the NFAIS website), in the interest of ensuring the best support of the scientific community, formed a Federation, a forum in which they could get together to discuss common interests and share knowledge and expertise.

Thus NFAIS, originally known as the National Federation of Science Abstracting and Indexing Services, was established in January of 1958 by fourteen U.S. organizations. For more than a half-century, the (now) international membership of NFAIS, consisting today of more than 60 organizations, has worked cooperatively to deliver valuable information services across the full range of scholarly and research communities.

What is the *raison d'être* of indexing (or discovery) services? Simply put, to allow scientists and scholars to navigate masses of information with relative ease. The bibliographic pointers such as keywords, subject indexes, authors, titles, etc. facilitate the discovery of information; abstracts allow the evaluation of a document's relevance to individual research interests; and links—either a bibliographic reference, or in today's world, an electronic link—allow retrieval of the full text. In a digital information environment, the critical importance of such a discovery and navigational layer cannot be overlooked. The NFAIS name change in 2007 to the National Federation of Advanced Information Services both reflects the importance of such content as well as the shift to digital retrieval in the 21st century research environment. But unlike changing the name of an organization, which can seemingly happen overnight with appropriate foresight and planning, the seamless shift to a digital information environment requires content providers to reconsider and redefine publishing systems and practices in order to maintain required levels of quality and accuracy in published scholarship.

Journal Articles Working Group

In the late 1980s and early 90s, electronic journals frequently were an offshoot of the print product. Workflows were tightly aligned and ensuring quality and accuracy seemed less of an issue. But in the late 90s, as the Internet grew in dominance, and as authors and publishers grew comfortable with the advantages of digital technology for publishing purposes, increasing divergence of workflows and practices became evident. Book and journal processes (manuscript creation, peer review, production, and distribution) changed and an increased expectation of speed added to the disparity of workflow. Publishing channels were rapidly spewing forth multiple versions of articles and diverse pagination and citation formats. Most intriguingly, the concept of a journal and its related elements was being re-shaped.

…the seamless shift to a digital information environment requires content providers to reconsider and redefine publishing systems and practices in order to maintain required levels of quality and accuracy in published scholarship.

NFAIS convened a round-table discussion of concerns resulting from these changes at the behest of the American Psychological Association; from that initial gathering grew a Working Group tasked with the following mission:

> *"…to develop a draft code of practice and establish guidelines for the use of elements and metadata related to the publication, identification, and delivery of electronic scholarly journal literature, with the ultimate objective of facilitating the digital publishing of one article at a time..."*

Making up the Working Group were more than a dozen representatives from scholarly societies, commercial entities, and national libraries reflecting the views of providers and consumers of research and scholarship in both the public and private sectors (a full roster of participants appears on page 26 of the final Best Practices document). In addition, a representative of CrossRef, the official DOI® link registration agency for scholarly and professional publications, participated in the Working Group discussion. CrossRef operates a cross-publisher citation linking system in support of researcher navigation across publisher platforms. Integrating CrossRef's technological expertise into a theoretical examination of the fundamental elements of the digital journal was important to the Working Group in developing a "final code of practice intended to facilitate the rapid findability and ease of use of scholarly journal articles for all who will benefit from them."

CONTINUED »

It quickly became apparent to the Working Group that, in order to develop a meaningful set of best practices, they would have to step back and review all the standard elements of the journal. What needs did the journal satisfy in modern scholarship and how did associated building blocks of its structure—such as volume, issue, page numbers, and subsequent elements of use, such as errata, citations, etc.—play into that role? What were the key elements of a print journal and why were those elements needed? Were those elements and needs still valid in a digital environment? Were there or ought there to be alternate solutions in the digital environment that might satisfy those concerns or activities? Essentially, what aspects of the printed journal were essential for preservation in a digital world?

This detailed examination extended to the elements of volume, issue, tables of content, pagination, date of publication, author, institution, article title, and in this age of open access publishing, copyright, and funding considerations.

As one example of the Working Group's analysis, consider the concept of journal issues. Representatives identified the basic purpose of the issue in the print environment as "the provision of manageable chunks of information" over a reasonable period of time. Over time, the usefulness of the "journal issue" was seen in satisfying other ways of thinking about and creating knowledge: the creation of special topical editions, browsability, and serendipitous discovery. At the same time, the concept of the issue was useful for purposes of organizing and thinking about other activity—subscription claims, legal recognition of revenue, production regularity, level of granularity for finding an article within a journal, etc. The Working Group agreed that the basic need for the provision of manageable chunks of information still existed in the digital environment as did some of the other uses of the issue (completeness, claims, etc.), but also agreed that the term "issue" may ultimately disappear and that alternate mechanisms in the digital environment might possibly be RSS feeds and alerting services.

This level of analysis was applied to every one of the aforementioned elements. It was a painstaking process, but allowed the Working Group to develop a context for determining best practices that would ensure needs common to both print and digital environment would be met as well as those that might be unique to digital delivery.

This discussion resulted in eleven best practices. Each contains recommendations for publishers of journal content as well as for providers of discovery (abstracting and indexing) services. While the Working Group is aware that not every organization, including those that they represent, will be able to act on all of the recommendations, they believe that these best practices are the ideal to which everyone should aspire.

RECOMMENDATION 1:

Affirmation of the Journal

Publishers and A&I services need to ensure that all articles are identified with the journal that accepted the article for publication.

Unequivocally, the Working Group stated that the journal is an essential component of scholarly communication. While alternate solutions to the concept of a journal in the digital environment could ultimately be a database or an archival repository, individual journal titles still carry a lot of clout when you consider such issues as branding, perceived value of content, and impact on an author's reputation as well as on their ability to obtain tenure.

Publishers need to ensure that all articles are identified with the journal that accepted the article for publication. Whether they are in a database or another compilation and whether or not they are distributed or sold on an individual basis does not change that need. In addition, if there is a change to a journal title, the publisher should notify A&I services of the change. Metadata for a journal title should be consistent. Finally, there was consensus that every journal should have an ISSN (International Standard Serial Number) registered for it. Preferred practice is to follow the recommendations issued by the ISSN International Centre.

With regard to A&I services, it is recommended that they include the journal title as a source for all articles published in a specific journal. And as a related practice, if an article that is published in a peer reviewed journal is placed in another repository, that repository should be considered a complementary tool, and the article should include links to the authoritative version of the article as presented by the publisher of the journal. ★

RECOMMENDATION 2:

Article Retrieval

The Digital Object Identifier (DOI®) should be used for article retrieval by both primary and secondary publishers.

A PUBLISHED ARTICLE NEEDS TO BE easily accessible, not only when it is first released, but also when it is needed by future generations of scholars and researchers. To provide a stable world for electronic content, it is essential that there be a universal means of access that can be consistently applied.

Due to the instability of URLs, particularly across longer time-frames, the Working Group recommends the use of the Digital Object Identifier (DOI®) for article retrieval by both the primary and secondary publishers. Primary publishers are to ensure that the DOI is a perpetual identifier, especially as journals change hands, by updating the DOI and having it maintained by the DOI organization so that the link is preserved. A&I services are to include links to the article DOI in their records. ★

RECOMMENDATION 3:

Version Management

Publishers should provide precise details on version status and dates to the A&I services. The A&I record should clearly indicate which version has been covered.

THIS ISSUE IS ONE OF—if not the—most difficult issue that the Working Group had to deal with. It covers all of the variations of: early publication articles, replaced articles, changed articles, retracted articles, and removed articles. While the need to make changes to articles is not new, the number of articles to which changes are made has increased. The Internet has changed the speed of publication and the goal is to disseminate new research discoveries as quickly as possible so that they can be built upon. Thus articles are released much earlier in the process than has been traditional, sometimes as soon as they are accepted for publication, resulting in a growth in the number of changes being made to "published" articles, as well as in a growth in the number of retracted or removed articles. It is essential that current and future generations of scholars be able to access the final version or what is termed the version of record. So let's take a look at each of these versions, beginning with the issue of early publications.

Early publications are defined as those released while "in press" and at an incomplete stage in order to release the information into the hands of the user as quickly as possible. These versions, the Working Group agreed, should include notation indicating that the article is an early version so that users are aware that a subsequent replacement will appear, and should specifically have the date, month and year of release as part of the article's metadata. A&I services are to indicate which version they have indexed, preferably indexing the early version and ultimately replacing it with the version of record.

When an early publication article is complete, the finished version is often inserted to replace the earlier version if it is substantially the same. However, the finished version should be labeled as a new version and, if the publisher considers it to be the version of record, this, too, should be noted. Again, the day, month, and year of release is to be included in the metadata. And again, A&I services are to indicate which version they have indexed, preferably indexing the early version and ultimately replacing it with the version of record.

Upon occasion, articles may require some type of change, perhaps one involving factual change. In such an instance, particularly if such a change were to occur in the abstract associated with the article, the Working Group recommends that publishers issue a notification—by publishing a notice in the journal, by releasing a notice to abstracting and indexing services, and by making such notices available in any e-mail alerts and RSS feeds.

Upon receipt of such official notification, A&I services are to create a new record indicating that an article has undergone substantive change. Records for errata must reflect the content of the publisher's notification and can be completed only if the notification has been published in the journal. A&I services can either link the new record to the original and vice versa or they can replace the original record with a new record that includes all of the original data in addition to the new information provided in the publisher's notification.

Primary journal articles may be reprinted in another journal or, with permission, as a chapter in a book, giving rise to yet another "version." Some of the metadata (article title, author, and correspondence information) will not change, but other associated metadata will change (journal title, volume, issue, etc.). In this instance of versioning, the recommendation is that a new DOI be registered for the reprinted article. In indexing such a reprinted article,

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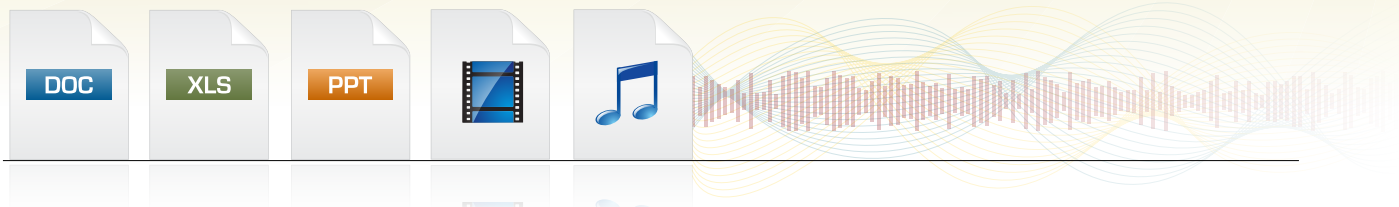

Abstracting and indexing services should note the availability of supplemental materials if the primary publisher has indicated that they exist. The record should also provide notice of their content and format (as supplied by the publisher).

discovery services should include information about the article's original publication, ideally through the provision of a "see record."

Articles are often retracted at the request of the author or by the publisher in response to legal concerns—resulting from such things as plagiarism, information that could pose a health risk, irreproducible data, etc. Publishers are asked to issue a retraction notice that is published prominently within the journal and linked to the original article. The notice should be included in any e-mail alerts or RSS feeds and circulated to abstracting and indexing services to ensure that it is widely available and linked to the original. The preference is to retract, but not to remove the offending article from the journal. The retracted article must be accompanied by a retraction notice, which should be the object of any links. It is preferable to watermark each page in a PDF as "retracted." The retraction notice should also be included in an HTML version. In both PDF and HTML versions, the retraction notice should be stated in boldface type at the beginning of the article. Basically, A&I services should follow the same exact procedure as recommended for changed articles.

The final aspect of versioning covers items that have been entirely removed from an online publication environment. On rare occasions, publishers have found it necessary to remove a retracted article from an online journal for legal or other reasons. The release of "early publication" material is resulting in a higher level of removed articles, either because authors withdraw them at some stage in the publication process or because serious flaws are discovered during that process. Since these are considered to be "in press" when they are removed, publishers are low key about it. However, the Working Group recommends that if an article is removed for any reason, the publisher should retain the metadata, insert a notice that the text has been removed, and issue a notice to abstracting and indexing services. In addition, the publisher should retain the entire article within their archives. A&I services are to create a new record for official notifications of removed articles and to record the removal of an article, regardless of the reason for which it was removed. ★

RECOMMENDATION 4:

Supplemental Materials

Publishers should clearly indicate when supplemental materials have been accepted along with an article. A&I services should note the availability of these materials.

Supplemental materials such as appendices, data sets, oversize tables, video clips, etc. are often packaged separately from an article submission due to space limitations or media incompatibility with a print journal. The digital environment should not have such limitations. It is recommended that the publisher clearly indicate when supplemental materials have been accepted along with an article. The materials may appear as an adjunct to the article within the journal itself. If the materials are on the web and not contained in the journal, the supplemental material should be linked to and from the article using a DOI. In all cases it should be made clear that the article and the supplemental materials are connected. Supplemental material, when accepted along with an article, is to be considered part of the journal's archival record. The publisher should include a recommended citation for the material and clearly track any subsequent changes made to the material. They should also provide metadata that may help discovery services identify the content and format of the supplemental material.

Abstracting and indexing services should note the availability of supplemental materials if the primary publisher has indicated that they exist. The record should also provide notice of their content and format (as supplied by the publisher).

The Best Practices document includes examples of the types of supplemental materials that may be expected to be included with digital journal articles and how they should be noted (see pages 10–11 of the Best Practices document). ★

RECOMMENDATION 5:

Content Creator

The metadata for every article should clearly credit the creator. A&I services should include all author names and affiliations.

A KEY PRECEPT IN SCHOLARLY PUBLISHING is to give credit to the author and others involved in the research. The publisher should clearly credit the creator(s) in the metadata for each article. The Working Group recommends that the metadata include the surnames, full given names, and middle initials, if available, of all authors who participated in the writing of an article, the affiliations of all authors—or at a minimum, the affiliation and contact information for the corresponding author and, if applicable, the institutional author and funding agency. It would be highly desirable for publishers to include roles of the individuals—such as author, editor, principal investigator, etc.—in the metadata if there is a distinction. And, when the industry has established standard author identifiers, that, too, should be included.

A&I services should include all information provided by the publisher, with a preference for displaying author names as supplied by the publisher in the original document. ★

RECOMMENDATION 6:

Indication of Length

Publishers and A&I services should include recommended metadata that indicate the size/length of the article.

IN THE PRINT WORLD PAGE NUMBERS are used to locate a unique article, indicate its length, provide some context, and offer ease of access to direct quotations. In the digital world, DOIs link the reader to a specific article, but do not provide information on context or length. The Working Group recommends a number of ways in which to indicate the size or length of an article, depending upon the presence and type of pagination used by the publisher. If articles are paginated sequentially throughout an issue or a volume, the recommendation is to include page ranges. If pagination is not sequential, include the total number of pages in the article. In the absence of page numbers, provide the number of words and the number of graphic elements in the article. For audio or video materials, indicate the length of play time. A&I services should include the information provided by the publisher. Unfortunately, only sequential page numbers allow for ease of access to quotations and the Working Group suggests that paragraph numbers may be a solution, although they did not make any recommendation regarding paragraph numbers. ★

RECOMMENDATION 7:

Article Identifiers

If a publisher chooses to use a custom article identifier, it should be constructed in a way that avoids confusion with any standard identifiers, e.g. ISSN. A&I services should include all supplied identifiers.

WHEN JOURNAL ARTICLES ARE PUBLISHED one by one, either ahead of print or in electronic form only, pagination is often eliminated or replaced by non-sequential numbers. Both of these practices render citations useless when trying to locate an article, so publishers are beginning to use article identifiers—not to be confused with DOIs—to remedy the situation. The Working Group recommends that if a publisher chooses to use an article identifier as a proxy for pagination in a journal, the identifier should be created using the following guidelines:

- To avoid confusion with pagination, volume number, or issue number, the created identifier should consist of at least six (6) alpha and/or numeric characters.
- Such identifiers should not include punctuation (also to avoid confusion).
- Nor should they be surrounded by parentheses.

Such identifiers can simply be generated by machine or they can be constructed to have meaning, such as the American Physical Society original article identifier that indicates issue, section, and sequence within the section. If the publisher uses article identifiers or any other surrogate for pagination, then the A&I services should include them. ★

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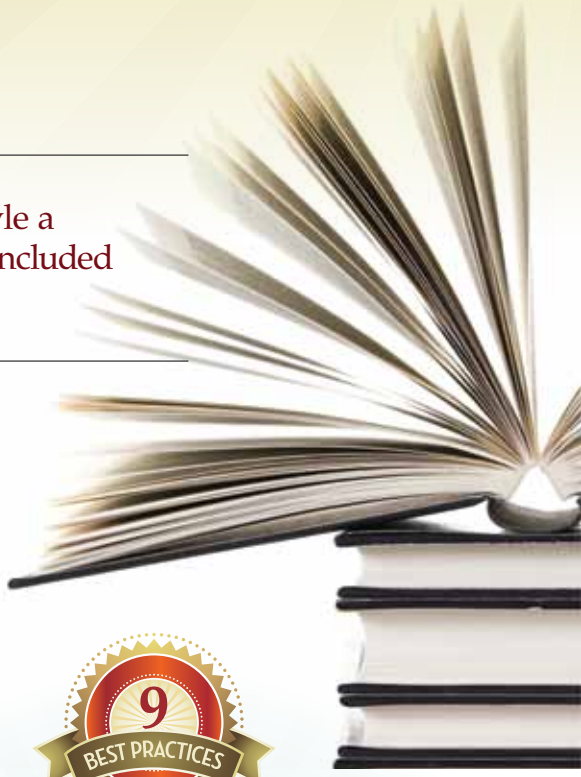
The Working Group recommends that whatever citation style a publisher chooses to use, a sufficient number of elements are included so that their combination will describe a unique document.



8 BEST PRACTICES

RECOMMENDATION 8:

Citation Elements

Whatever citation style a publisher chooses to use, a sufficient number of elements should be included so that their combination will describe a unique document. These same elements should be included in the A&I record.

The Working Group recognized the existing range of citation styles or systems, such as the Chicago Style, APA style, MLA style, AIP style, etc., and they are not recommending one over another. However, they do recommend that whatever citation style a publisher chooses to use, a sufficient number of elements are included so that their combination will describe a unique document. Specifically, best practice requires the following elements:

- Author Surname, full given name, and middle initials (or that of institutional author)
- Journal Title
- Article Title
- Publication Date, preferably year, month, and day
- Volume (if the journal publishes in volumes)
- Issue (if the journal publishes in issues)
- DOI
- Pagination or Article Identifier (to indicate location)
- Alternative indication of Length if pagination is not used

In addition, when a standard for an author ID is created, its inclusion as part of the citation is desirable. The Best Practices document also states that publishers should include their recommended citation for an article on the DOI Landing Page, in the metadata for the article, and in a prominent place as close to the beginning of the actual article in the print, PDF, and XML versions.

A&I services should include all the elements necessary to construct the publisher's recommended citation in their records. ★

9 BEST PRACTICES

RECOMMENDATION 9:

Tables of Contents and Indicators of Completeness

It is essential that the publisher provide a verifiable sequential unit and a list of the articles published within that unit. A&I services should cite the unt designation (e.g., volume and issue).

Knowing that an issue of a journal is complete is of key importance to libraries, individual subscribers, and A&I services—and also to the population of users served by those groups. But securing such knowledge can be particularly problematic as more and more publishers move to deliver multiple issues in varying stages of completeness. The Working Group is aware that journal publishers choose to release articles in a variety of ways; for example, they may assign articles to journal issues and volumes as per tradition; articles may only be assigned to a journal volume; articles may be released sequentially and assigned only to a time period; or they may be released in some other sequence. But regardless of the format chosen, it is essential that the publisher provide a verifiable sequential unit and a list of the articles published within that unit. In addition, they should clearly label the unit so that customers, users, and discovery services know what they should have received in order for that unit to be complete. If, for whatever reason, the table of contents is revised after its initial release, the revised version should be sent to customers and to indexing services. Abstracting and indexing services should include the publisher designation of the publishing unit (such as issue or volume) in the records for individual articles. ★

RECOMMENDATION 10:

Journal Editor Identification

Publishers should maintain on the open web a list of editors for each journal title to enable interested parties to track the succession of editors for a specific journal.

Editors of most journals have a very significant influence on a journal's policies and content focus, and these often change when a new editor arrives. If a researcher wants to trace the evolution of a journal or even a field of study, knowledge of the editor as the decision-maker during a given time period is a key element. In the print journal, the editor is clearly visible to the reader who seeks such information; however, in the electronic version, editor information generally disappears. As a result, the Working Group recommends that publishers maintain a list of editors for each journal title on the open web to enable interested parties to track the succession of editors for a specific journal. That list should include the names and tenures of each editor, and it should be linked from the journal. It was agreed that it is not necessary or appropriate for the journal editor to be included with article-level information, and therefore A&I services need not capture that information. ★

RECOMMENDATION 11:

Copyright Statement

Publishers should display the copyright holder and the year of copyright clearly on each article, preferably on the first page. A&I services should include the copyright holder in each article record.

Traditionally, the journal publisher has owned copyright for the journal as well as for all or most of the articles published in the journal. In today's environment, copyright is much more complex and there are so many possible permutations that it is likely to be impossible to capture all of them in a best practice. Publishers should display the copyright holder and the year of copyright clearly on each article, preferably on the first page. If articles are delivered in print, PDF, and HTML formats, the copyright holder should be evident in all.

Discovery services should include the copyright holder in the record for each article when it is easily determined from the published article ★

The full Best Practices document is publicly accessible at the NFAIS website. Where it was thought to be useful for clarification, additional background and examples accompany the discussion of each practice.

The NFAIS membership urges other organizations to examine and implement these practices, thereby ensuring that scholarly research will be accessible and retrievable both now—and well into the future.

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JILL O'NEILL <jillmwo@gmail.com> is Director of Planning and Communication at NFAIS and **BONNIE LAWLOR** <blawlor@nfais.org> is Executive Director of NFAIS.

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RELEVANT LINKS

NFAIS website
http://www.nfais.org

Best Practices for Publishing Journal Articles
http://www.nfais.org/Best_Practices_Final_Public.pdf

ISSN International Centre
http://www.issn.org/

THE INTERNATIONAL STA

AN OVERVIEW AN

A New Era of Discovery, Cataloging, and Trading Demands Standardized Solutions to Complex Challenges

For decades, it has been commonplace for textual content to be published in more than one format or edition, and often made commercially available or discoverable by more than one publisher.

The continued and highly diversified emergence of electronic reading mediums and devices, such as e-book readers, mobile phones, and Internet-based book cataloging environments, has created new opportunities for authors, publishers, libraries, and others to make content available to end users. At the same time, the dramatic increase of the number of digital manifestations of a given textual work has spawned a number of challenges and complexities for the supply chain at large in its attempts to effectively catalog textual works for discovery, trading, collections development, lending, and sales analyses.

Adding to these complexities, there are dozens of e-book file formats that are still very much device-dependent and maintain functional disparities within their usability, such as digital rights management (DRM) restrictions, cut and paste functionalities, and others which need to be differentiated for the purposes of accurate cataloging, discovery, and trading of textual works and their same-text manifestations for all supply chain stakeholders and the end consumers they serve.

In today's digital supply chain and in the future, new and important business cases are also emerging that will radically change the way that content owners, authors, and contributors provision content to end customers. Library scanning initiatives, Google Book Search, and others are forcing all industry stakeholders to re-think and re-define their bibliographic cataloging, trading, and rights management processes and procedures. For example, digital intermediaries and online retailers often accidentally list (and sell) publications intended for specific countries when they ought to be selling only a different, territory-specific edition.

Across all of these important processes and procedures, the one remaining constant is that accurate and well-organized metadata that reflects both product-level and work-level detail can help maintain the interests of content creators, rights-holders, trading partners, and end consumers. The International Standard Text Code, or ISTC, has strong potential to provide an organized, industry-wide framework for managing these expectations.

ANDY WEISSBERG

NDARD TEXT CODE (ISTC): D STATUS REPORT

The ISTC: A Global Identification System for Textual Works

The International Standard Text Code (ISTC) system, an ISO Standard (21047), is a global identification system for textual works that is primarily intended for use by publishers, bibliographic services, retailers, libraries, and rights management agencies to collocate different manifestations of the same title within a work-level record.

ISTCs are designed to identify textual works, i.e. the outputs of creative and/or intellectual effort expressed wholly or predominantly in textual form that are intended for publication. Textual works which include illustrations, whether created specifically for the work or reused from elsewhere such that they are regarded as an integral part of the work, are eligible for ISTCs. Works that are entirely graphic, with no text, are not eligible for ISTCs. Among its many benefits, the ISTC now makes it possible to group products containing the same content, or even in some cases, different content with the same origins, together. As a result, the ISTC will ultimately enhance and improve the discoverability of books and other written publications, support compliance with territorial rights management across the supply chain, improve collections development and management, and will help facilitate sales and loans analysis.

ISTC will ultimately enhance and improve the discoverability of written publications.

ISTCs are designed to be flexible and granular. For example, one ISTC can be used to identify *War and Peace* as an original work and provide a collocating mechanism for all printed and digital editions, as well as manifestations in a whole range of other media. And it can also be used by publishers to collocate the various editions of a single title or to collocate all the chapters within a single title. This means that it has considerable potential value for managing contracts and royalties as well as for assisting the search processes of online retailers, among many other applications. Instead of needing to know all the different titles under which the same work has been published, the user need only find one edition, from which the ISTC number can be used to link all alternative editions of the work. Conversely, when a publication has a title shared with, or similar to that of completely different works, the results list of a search can be reduced to include only the desired work. This can be more precise, and certainly quicker, then relying on refining a search using one or more contributor names, especially when the author has written several works with similar titles.

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ISTC	0A9	2009	12B4A105	7
When an ISTC is displayed it will always be preceded by the letters "ISTC"	**Registration element** **DIGITS = 3** Used by the registration agency for administrative purposes	**Year element** **DIGITS = 4** Represents the year in which the ISTC was registered	**Work element** **DIGITS = 8** Assigned automatically by the central ISTC registration system after a metadata record has been submitted for registration and the system has verified that the record is unique.	**Check digit** **DIGITS = 1** Automatically generated by the ISTC registration system

ISTC Assignments

An ISTC can only be allocated to a textual work by an authorized ISTC registration agency; this will usually follow a request from either the creator of the work or an authorized representative, e.g. a publisher of that work. The person or organization that asks for a work to be registered and provides the metadata for it is called the "registrant."

Each ISTC is a unique "number" assigned by a centralized registration system to a textual work, when a unique set of information about that work, known as a "metadata record," is entered into the system. If another, identical metadata record has already been registered (perhaps in the case of an out of copyright work by another publisher), the system will assume the new ISTC request refers to the same work and will output the ISTC of the identical (or nearly identical) metadata record already held on the system. An ISTC does not "belong" to a single author/publisher; rather, it "belongs" to the work it identifies. This means that the same ISTC number should be used to identify the same content even when it is being published by a different publisher and/or in a different publication format. By including the ISTC of a textual work in the list of attributes of each actual product (e.g., each book) that it is published in, it is then possible to search for, and find, only that specific textual work among many products. This is the case even though some products with different content might have very similar or even identical names, and even though some products containing the desired content have entirely different names.

ISTC Structure and Metadata Considerations

An ISTC consists of 16 numbers and/or letters. These are "hexadecimal digits," which may be any of the Arabic numerals 0 to 9 and the Latin letters A to F. While no "meaning" should be inferred from the digits of an ISTC, they are constructed from the following parts, starting from the left:

- **Registration element** – This is used by the registration agency for administrative purposes and consists of 3 hexadecimal digits.
- **Year element** – This is 4 digits long and represents the year in which the ISTC was registered. It does not relate to the year in which the work was produced or first published.
- **Work element** – This consists of 8 hexadecimal digits. It is assigned automatically by the central ISTC registration system after a metadata record has been submitted for registration and the system has verified that the record is unique.
- **Check digit** – This is a single hexadecimal digit, automatically generated by the ISTC registration system. It is calculated in accordance with ISO/IEC 7064 using MOD 16-3.

When an ISTC is displayed it will always be preceded by the letters "ISTC", with a hyphen or space between each element. For example:

```
ISTC 0A9 2009 12B4A105 7
ISTC 0A9-2009-12B4A105-7
```

An ISTC may be allocated to an eligible work as soon as sufficient information about the work can be provided; the work does not have to have already been published. In fact, it is preferable to allocate an ISTC before publishing the work, so that the "product record" (which, if it is for a book, would usually be identified by an ISBN) can include the ISTC as an attribute of the product record from the outset. An ISTC can equally be assigned to a work after its publication, although care needs to be taken in case there are multiple editions (e.g., the same work in different formats and/or through different publishers).

In order to register a textual work with an ISTC, it must be possible to uniquely describe the work so that it can be distinguished from any similar works already allocated their own ISTC. The ISTC registration system accepts "metadata" about each work using the *ONIX for ISTC Registration Messages* metadata schema. This is based on the book industry standard for communicating product information, *ONIX for Books*, but requires fewer data elements and has some data

elements which are unique to ISTC. These include information about the origin of the work. For example, is the work entirely original, or derived (perhaps as a translation or an annotated version) from another work? These data elements are necessary because ISTC metadata is used to make it possible to easily distinguish one work from another, even if two works have the same name and author.

ISTC registration agencies capture such administrative metadata as may be essential for the efficient management of the registration process. It is important that the information about a work should be provided by someone knowledgeable and responsible, ensuring that information is as accurate as possible. There may be some situations where a third party, e.g., a national library, wishes to register a number of textual works which are out of copyright; if there is no longer any living representative for the author, then a third party, (in this example, the library) would be allowed to act as the registrant for these works.

With ISTC, Are ISBNs Still Necessary?

Absolutely they are. The ISTC is not intended for identifying manifestations of a textual work, including any physical products (e.g., a printed article) or electronic formats (e.g., an electronic book). Rather, manifestations of textual works are the subject of separate identification systems, including and not limited to the ISBN.

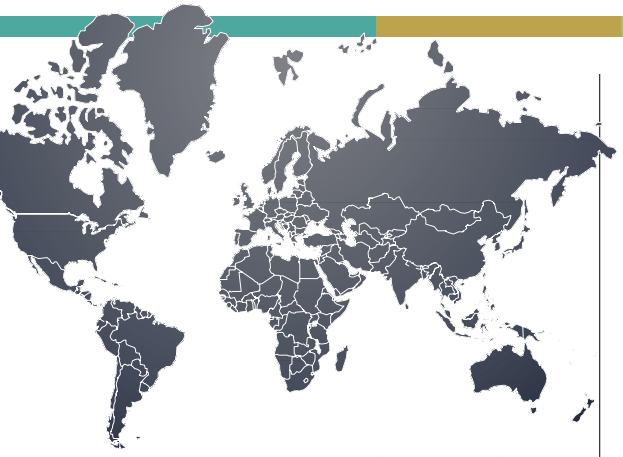
Over the past three decades or more, the ISBN has provided an industry-standardized framework for distinguishing different products and their manifestations. However, the introduction and emergence of proprietary and complex electronic models for content delivery and trading have also forced a paradigm shift in the way that publishers and content owners identify the various electronic manifestations of their content, with some abandoning the ISBN standard for e-book formats. From the perspectives of responsible product identification, optimized collections development, and end user discovery, ISBNs can and should continue to be assigned to individual formats of an e-book or multiple available versions of e-resources when product attributes differ, but managing the massive level of manifestations can be quite challenging and complex for our industry.

When an ISTC is included in the product record for each of the different editions, it is possible to automatically exclude those editions for which a territory-specific equivalent with "sole market rights" is available. As a result, librarians and library systems can easily and accurately collocate publications automatically, even when they have different titles, when an ISTC is included in the catalog record. For publishers, sales analyses and analyses of loans can be efficiently run at the level of a work instead just of unique editions. This addresses the problem of putting a value to the total sales of multiple editions, or the total number of library loans where one or more libraries have different editions of a publication.

The introduction and emergence of proprietary and complex electronic models for content delivery and trading have also forced a paradigm shift in the way that publishers and content owners identify the various electronic manifestations of their content, with some abandoning the ISBN standard for e-book formats.

PROBLEM SOLVING

An ISTC allows publishers to efficiently run sales analyses and analyses of loans at the level of a work instead just of unique editions. This addresses the problem of putting a value to the total sales of multiple editions.



In 2009, Bowker, Nielsen, and MVB have each formally announced their respective ISTC Registration Agency operations, and it is anticipated that numerous additional Registration Agencies will be launched in the near future across global markets, with each agency's application including a statement of purpose for their respective operations.

Status of the ISTC

The International ISTC Agency (ISTC-IA) was officially formed in 2008, although ISTC's roots date back more than a decade before the Standard was approved and published. At the Founding Member and operating level, it includes important and diversified representation from bibliographic agencies including Bowker and Nielsen, and global rights management and protection associations including the International Federation of Reproduction Rights Organisations (IFRRO) and The International Confederation of Societies of Authors and Composers (CISAC).

In 2009, Bowker, Nielsen, and MVB (Marketing- und Verlagsservice des Buchhandels GmbH) have each formally announced their respective ISTC Registration Agency operations, and it is anticipated that numerous additional Registration Agencies will be launched in the near future across global markets, with each agency's application including a statement of purpose for their respective operations. For example, some agencies will enable registrants to integrate the ISTC registration process early on in their own workflows, and will facilitate publishers incorporating the relevant ISTC(s) as product metadata in their internal cataloging environments and bibliographic data feeds. Others, and particularly those that operate bibliographic agencies, are already using ISTCs as enrichment sources that link records of products containing the same and/or closely related content within their bibliographic databases—with an ultimate goal of increasing the discoverability of old, current, and forthcoming products, supporting sales, and lending analyses on behalf of publishers and library customers.

An important milestone reached by ISTC-IA in 2009 was the beta-launch of the Standard Text Registration System (STRS), which is the system that all ISTC Registration Agencies will utilize to facilitate ISTC assignments on behalf of registrants. Key learnings were achieved as part of numerous pilot programs that were commenced in concert with publishers and through the use of bibliographic data samples. Although the STRS system continues to be enhanced to support new and emerging use cases and functional requirements, as a minimum yet major requirement, the system can now officially process and accurately render ISTC assignments through the use of quality work-level data and the *ONIX for ISTC* schema.

Business and data analyst intervention and support continues to be aggressively allocated from the ISTC-IA and authorized ISTC Registration Agencies in order to ensure the highest levels of accuracy are possible, as exact textual matches between original works and their manifestations are, at times, difficult to confirm on the basis of metadata alone. In the future, it is possible and anticipated that the system will be enhanced to include more sophisticated mechanisms for validating textual work matches, such as full-text mining applications and other utilities that provide for advanced validation use cases to be realized.

Conclusion and Call to Action

Although there are currently major efforts underway to advance ISTC adoption this year, 2010 will likely be the timeframe in which the ISTC is more aggressively and formally adopted by the supply chain at large. All stakeholders are highly encouraged to collaborate with ISTC Registration Agencies and the ISTC-IA to become more educated about the processes, features, and benefits associated with the assignment and utilization of the ISTC within their respective efforts for optimizing discovery, cataloging, trading, and rights management.

| FE | doi: 10.3789/isqv21n3.200904

RELEVANT LINKS

International ISTC Agency
www.ISTC-International.org

ISO 21047:2009, ISTC
www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=41603

ONIX for ISTC Registration Messages
www.istc-international.org/index.php?ci_id=1820

ANDY WEISSBERG <andy.weissberg@bowker.com> is Vice President of Identifier Services at Bowker (www.bowker.com).

OP [OPINION]

A judgment formed about something;
a personal view, attitude, or appraisal

Bella Hass Weinberg

BELLA HASS WEINBERG

REVIEW: IFLA's New Guidelines for Multilingual Thesauri

Guidelines for Multilingual Thesauri, [by the] Working Group on Guidelines for Multilingual Thesauri, IFLA Classification and Indexing Section. The Hague: International Federation of Library Associations and Institutions, 2009. 26 pp. (IFLA Professional Reports, No. 115). ISBN 978-90-77897-35-5; ISSN 0168-1931. http://archive.ifla.org/VII/s29/pubs/Profrep115.pdf

Approaches

As the Introduction states (p. 2), the IFLA standard deals with two approaches to the development of multilingual thesauri: (1) "Building a new thesaurus from the bottom up," and (2) "Combining existing thesauri."

The section on the first approach discusses the morphology and semantics of descriptors, with headings that parallel those of standards for monolingual thesauri. Equivalence is dealt with in the last subsection, with examples in German, Spanish, French and Dutch. Five types of relationships between terms in different languages are dealt with: exact equivalence, inexact equivalence, partial equivalence, one-to-many equivalence, and non-equivalence. Solutions and examples are provided for each case.

The section on combining existing thesauri focuses on linking/mapping. For incomplete equivalence, Boolean combinations are suggested. One of the examples given for Boolean OR is "Jumping" (English), which is mapped to "Hochsprung OR Sprung" (German). This structure places a burden on the user to select the correct term for the context. Furthermore, not all thesaurus software packages can handle the USE OR relationship; they assume a single equivalent, not a choice of equivalents.

The example for Boolean AND is a Library of Congress Subject Heading with a subdivision: "Cycling – Training." The German equivalent is presented as "Radsport AND Training." Precoordinated subject headings are out of scope for a thesaurus standard. The German equivalent illustrates *decoordination*, i.e., splitting a precoordinated heading into two descriptors.

Thesaurus Translation

A third approach to multilingual thesaurus development is enumerated: "Translating a thesaurus into one or more other languages"; surprisingly, however, "This approach is not discussed."

In the U.S., I believe the last-mentioned approach is the one most frequently taken, primarily for subject heading lists, including that of the Library of Congress (LC) and Sears (1984). In Israel, for example, LC Subject Headings were translated into Hebrew; then, more specific terms were added to the Hebrew vocabulary, and these were also translated into English (*Hebrew Subject Headings*, 1992). A Chinese edition of *Medical Subject Headings* has a similar pattern: English terms translated, with additional terms for Oriental medicine in Chinese characters.

For the benefit of those who want to take the third approach, the IFLA *Guidelines* refer to an article that deals with the translation of thesauri.

Content and Format

I like the placement of the Glossary before the References; ANSI and ISO standards have definitions at the beginning.

The IFLA *Guidelines* deal with regional variants of a single language, e.g., British and American English, as well as disparate languages. The *Guidelines* specify that all terms should be given "in the script of the individual language" (p. 9). This contrasts with the "out" that AACR2 gave catalogers, requiring them to record bibliographic data in the original script only "wherever practicable" (AACR2, 1978, rule 1.0 E). That phrase remains in the 2002 revision of AACR2. In the 21st century, with the widespread availability of UNICODE, multilingual thesauri incorporating languages in non-Roman scripts should not have to use Romanization—or conversion into any other script.

All the examples in the *Guidelines* feature a capital letter for the initial letter of the term. This contrasts with the NISO guidelines for monolingual controlled vocabularies (ANSI/NISO Z39.19-2005), which recommend lowercasing all terms except

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proper names. The NISO standard, however, documents the frequent flouting of this guideline: "Note that many existing controlled vocabularies deviate from this recommendation and use initial capitals in the display of terms" (ANSI/NISO Z39.19-2005, p. 34, sect. 6.7.1).

Having done research in European libraries and seen multilingual interfaces to catalogs, I found the non-English codes for thesaurus relationships of particular interest, e.g., "EM: Employer" for USE (p. 3, note 4). It's surprising that the French infinitive ("to use")—rather than the command form of the verb—was used.

The IFLA *Guidelines* focus on the structure of multilingual thesauri as opposed to their format. Screen display and interfaces are not dealt with at all. As my colleague Prof. Bruce Croft observed regarding hypertext, "Standards should not be developed for information structures that are still being experimented with" (confirmed in a personal communication, May 15, 2009). There are so many poor interfaces to online thesauri; this aspect of controlled vocabularies is not ready for standardization, as we have inadequate data on user preferences as well as difficulties with such interfaces.

Bibliographic Data

The standard includes an excellent bibliography that should be useful both to developers of multilingual thesauri and to educators in this field. Most thesauri cited in the text have full references in the bibliography, except for the HEREIN Thesaurus (p. 11, note 15).

Interestingly, the references are formatted with ISBD [International Standard Bibliographic Description] punctuation—an IFLA invention (ISBD, 1974). ISBD will only be in an appendix of the document that will serve as the third edition of *Anglo-American Cataloguing Rules*, which is to be entitled *RDA: Resource Description and Access* (Joint Steering Committee, 2009).

The cataloging-in-publication data (not labeled as such) on the verso of the cover page of the IFLA standard indicates that the *Guidelines* contain 30 pages. The last numbered page is 26, and it is the cataloger's convention to record *that* datum in the physical description field.

Errata

There are very few editorial flaws in the *Guidelines*. The correspondence of author-date references in the text to full bibliographic references is good. I noticed one typo: "Duttch" (p. 5, note 2) and a missing letter in the full reference for "Milstead 2001": "Standard" should read "Standards." The editor of the *IFLA Guidelines* was chintzy with commas, necessitating a double-take to parse some sentences correctly. In a published document, references to later discussions should use the present tense, not the future.

The IFLA *Guidelines* have an imprecise reference to the Glossary—"at the end of this document" (p. 3)—yet the Glossary is a numbered section of the *Guidelines*. The Appendix (a sample multilingual thesaurus) actually comes at the end. I would have preferred it before the glossary, for ease of reference to the bibliography. What really should have come at the end is an index.

These flaws notwithstanding, I highly recommend this concise, readable, informative, and well-documented standard for the development of multilingual thesauri.

Unlike its British Standard or ISO counterparts on multilingual thesauri, the IFLA *Guidelines* may be downloaded for free from the web, and may also be ordered in hard copy. For the former reason alone, I expect the IFLA *Guidelines* to be used and cited far more than its counterparts. | OP | doi: 10.3789/isqv21n3.200906

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Acknowledgments: Assemgul Temirkhanova, my Graduate Assistant in the Division of Library and Information Science at St. John's University, assisted with the documentation of this paper. The resources of the University Library were also helpful.

RELEVANT LINKS

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AACR2 (2002) *Anglo-American Cataloguing Rules*, 2nd ed. 2002 revision. Chicago: American Library Association. Looseleaf.

ANSI/NISO Z39.19-2005 National Information Standards Organization. *Guidelines for the Construction, Format, and Management of Monolingual Controlled Vocabularies*. Bethesda, MD: NISO Press.

BS 6723:1985 British Standards Institution. *Guide to Establishment and Development of Multilingual Thesauri*. London: BSI.

BS 8723-4:2007 British Standards Institution. *Structured Vocabularies for Information Retrieval. Guide*. Interoperability Between Vocabularies. London: BSI.

Hebrew Subject Headings (1992), developed by the Hebrew Classification and Cataloging Department, Bar-Ilan University, Ramat Gan. 2 vols. + updates. – Reviewed by Bella Hass Weinberg in *Judaica Librarianship* vol. 7, no. 1-2 (Spring 1992 –Wint er 1993), 64-70.

ISBD (1974) International Federation of Library Associations. *ISBD(M) : International Standard Bibliographic Description for Monographic Publications*. First Standard Edition. London: IFLA Committee on Cataloguing.

ISO 5964-1985 (E) *Documentation – Guidelines for the Establishment and Development of Multilingual Thesauri*. First ed. [Geneva]: International Organization for Standardization.

Joint Steering Committee for Development of RDA (2009) *RDA: Resource Description and Access: Prospectus*. www.collectionscanada.ca/jsc/rdaprospectus.html. Last updated 5 Jan. 2009 (accessed May 13, 2009).

Sears, Minnie Earl (1984) *Sears: Lista de Encabezamientos de Matria: Traducción y adaptación a de la 12ª. edición en inglés*. New York: H.W. Wilson.

Jay Datema

JAY DATEMA

The Information Bomb and Activity Streams

In 1993, Yale computer science professor David Gelertner opened a package he thought was a dissertation in progress. Instead, it was a bomb from the Unabomber, who had written in his manifesto that "Technological society is incompatible with individual freedom and must therefore be destroyed and replaced by primitive society so that people will be free again." Though Kaczynski's point was lost when attached to violence, it's ironic that his target was a computer science professor who professed not to like computers, the tool of a technological society.

> This planned obsolescence is by design, and the stream comes and goes like an information bomb.

In addition, in one of the dissertations Gelertner supervised, Eric Thomas Freeman proposed a new direction for information management. Freeman argued that "In an attempt to do better we have reduced information management to a few simple and unifying concepts and created Lifestreams. Lifestreams is a software architecture based on simple data structure, a *time-ordered stream* of documents, that can be manipulated with a small number of powerful operators to locate, organize, summarize, and monitor information." Thus, the stream was born of a desire to answer information overload.

While Freeman anticipated freedom from common desktop computing metaphors, the web had not reached ubiquity 12 years ago. His lifestreams principles live on in the software interfaces of twitter, delicious (formerly del.icio.us), Facebook, and FriendFeed. But have you tried to find a tweet from three months ago? How about something you wrote on Facebook last year? And FriendFeed discussions have no URL, so there's no easy way to return to the past. This planned obsolescence is by design, and the stream comes and goes like an information bomb.

In *The Anxiety of Obsolescence*, Pomona College English professor Kathleen Fitzpatrick says that "The Internet is merely the latest of the competitors that print culture has been pitted against since the late nineteenth century. Threats to the book's presumed dominance over the hearts and minds of Americans have arisen at every technological turn—or so the rampant public discourse of print's obsolescence would lead one to believe." Fitzpatrick goes on to say that her work is dedicated to demonstrating the "peaceable coexistence of literature and television, despite all the loud claims to the contrary." This objective is a useful response to the usual kvetching about the utter uselessness of the activity stream of the day.

A Standard for Sharing

Now popularized as activity streams, the flow of information has gained appeal because it gives users a way to curate their own information. Yet there is no standard way for this information to be recast by the user or data providers in a way that preserves privacy or archival access.

Chris Messina has advocated for social network interoperability, and suggests that "with a little effort on the publishing side, activity streams could become much more valuable by being easier for web services to consume, interpret and to provide better filtering and weighting of shared activities to make it easier for people to get access to relevant information from people that they care about, as it happens." Messina points out that the activity streams "provide what all good news stories provide: the who, what, when, where and sometimes, how."

In the digital age, activity streams could be used as a way to record interactions with scholarly materials. Just as COUNTER and Metrics from Scholarly Use of Electronic Records (MESUR) record statistics about how journal articles are viewed, an activity stream standard could be used to provide context around browsing.

For example, Swarthmore has a fascinating collection of W.H. Auden incunabula. You can see what books he checked out, the books he placed on reserve for his students, and even his unauthorized annotations, including his exasperated response on his own work, "Oh God, what rubbish." What

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Users can manage or drown in the stream. To safeguard this information, users should push for their own data to be made available so that they can make educated choices.

seemed ephemeral is a fascinating exercise in tracing the thought of a poet in America at a crucial period in his scholarly development. If we had captured what Auden was listening to, reading, and attending at the same time, what a treasure trove it would be for biographers and scholars.

The Appeal of Activity Streams

In 2007, Dan Chudnov wrote in *Social Software: You Are an Access Point,* "There's a downside to all of this talk of things "social." As soon as you become an access point, you also become a data point. Make no mistake—Facebook and My Space wouldn't still be around if they couldn't make a lot of money off of each of us, so remember that while your use of these services makes it all seem better for everybody else, the sites' owners are skimming profit right off the top of that network effect." How then can the user access and understand their own streams and data points?

Macej Ceglowski, former Mellon Foundation grant officer and Yahoo engineer, has founded an antisocial bookmarking service called Pinboard which safeguards user privacy over monetization and sharing features. One of its appealing features is placing the user at the center of what they choose to share, without presuming that the record is open by default. In fact, bookmarks can be made private with ease.

In *The Information Bomb*, Paul Virilio wrote that "Digital messages and images matter less than their instantaneous delivery: the shock effect always wins out over the consideration of the informational content. Hence the indistinguishable and unpredictable character of the offensive act and the technical breakdown." Users can manage or drown in the stream. To safeguard this information, users should push for their own data to be made available so that they can make educated choices.

With the well-founded Department of Justice inquiry into the Google Book project about monopoly pricing and privacy, libraries can now ask for book usage information. Just as position information enables the Hathi Project to provide full-text searchability, usage information would give libraries a way to better serve patrons, and to give special collections a treasure trove of information.

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RELEVANT LINKS

Activity Streams
activitystrea.ms/

Adding Richness to Activity Streams
factoryjoe.com/blog/2008/06/11/adding-richness-to-activity-streams/

The Anxiety of Obsolescence
www.worldcat.org/wcpa/isbn/9780826515193

DiSo Project
diso-project.org/

Hathi Trust
www.hathitrust.org/

The Information Bomb
www.worldcat.org/oclc/44506901

The Lifestreams Software Architecture
www.cs.yale.edu/homes/freeman/dissertation/etf.pdf

Lifestreams
cs-www.cs.yale.edu/homes/freeman/lifestreams.html

Pinboard
pinboard.in

Social Software: You are an access point
www.accessmylibrary.com/coms2/summary_0286-33434602_ITM

The Unabomber Manifesto: industrial society and its future
www.worldcat.org/oclc/68653561

W.H. Auden @ Swarthmore
www.swarthmore.edu/library/auden/library1a.html

QA [QUESTION & ANSWER]

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Member Spotlight on SirsiDynix: Where Standards Are a Core Value

SirsiDynix is a worldwide supplier of library technology solutions—including integrated library systems, search and discovery tools, resource sharing, reporting and productivity products, data management services, consulting, and software as a service—to over 23,000 customers in 70 countries. For this month's member spotlight, I spoke with Ed Riding, Technical Product Manager; Anne Arthur, Technical Manager, Product Management; and Berit Nelson, Vice President, Strategic Library Development.

Q How has your company / organization incorporated standards into its products / services?

Ed: Throughout every product line and every corner or aspect of SirsiDynix, we've implemented standards. Our customers expect compliance with certain standards like MARC and Z39.50. In addition to these, we support EDIFACT and X12 for acquisitions, SIP and NCIP for circulation and interlibrary loan, all the major Internet networking protocols, and many web standards like HTTP.

Berit: Web standards are especially critical in the software as a service market. While we've had that service available for 2-3 years, we've seen a significant shift in customer interest. As a result, our customers are more interested in our W3C compliance for browser flexibility and LDAP and other authentication standards. They are increasingly asking about the types of APIs we support, such as SOAP for web services. And we're seeing more requests for services to work on mobile devices.

Q What benefits has your company / organization gained from utilizing standards and incorporating them into its products?

Anne: We are able to offer our customers the ability to grow their systems and to take advantage of associations with other libraries for sharing of resources through NCIP or accessing catalogs with Z39.50. End users get the latest capabilities in search and browser technologies as well as support for electronic delivery through OpenURL linking support.

Ed: Library staff receive just as many benefits as the end users. We're able to streamline workflows and improve needed back-end integration with vendors such as in the acquisitions process. Seamless data exchange involves many more types of information than cataloging records and requires many more standards than MARC.

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Berit: In recent years, we've seen considerable growth in the use of SIP2 for self-service automation, such as patron self-check-out, automated check-in, or paying fines. This offers the library the benefit of spending more staff time on higher-end services than circulation.

Ed: Yes, it lets librarians do more with less in a tight financial time when library service requests increase but library staff doesn't. Self-service can also prevent repetitive stress syndrome among staff members who were previously handling large volumes of circulation.

Berit: One of the greatest benefits of standards and related concepts such as open APIs is in the new product opportunities that become available for both SirsiDynix and our customers. A recent example is DC Public Library's iPhone application that allows users to search the library's catalog and place holds from their iPhone. SirsiDynix plans a broader set of mobile applications that will address end user, staff, and library manager needs.

Q How have you been involved in standards development and what benefits does the company gain from their employees' participation?

Ed: My own involvement with standards goes back many years. I worked on the development of the SISAC X12 Electronic Data Interchange standard nearly from the outset and later on the U.S. Z39.50 Profile [ANSI/NISO standard Z39.89]. The profile development is a good example of how a standard like Z39.50 can be so broad and encompassing that user communities, consortia in particular, need a profile to effectively implement it.

Berit: Z39.50 is also an example of where newer specifications are being developed, such as SRU or OpenSearch, but the old standard is still a workhorse and so continues to be a basic feature in our systems, even while we look at developing and supporting the newer enterprise search standards.

Anne: Another example of that situation is SIP and NCIP [ANSI/NISO Z39.83]. SirsiDynix was actively involved in the development of NCIP and its recent 2008 revision, but we continue to support both standards. NCIP is also like Z39.50 in that it is very encompassing and not everyone will want to implement it fully or in exactly the same way. So profile development and cooperation between vendors will likely also be important in NCIP implementation.

Berit: We feel it is important to participate as much as possible in different standard development efforts. It's often difficult, though, to determine where best to put our resources when so many organizations are working on similar things. Customers don't always recognize how much effort is put into standards compliance and creation, which is part of what gets included in the price of ongoing maintenance fees. Before we commit to a standards effort, we have to ask ourselves: Is it going to improve our customer's workflow? Will it reduce their time of processing? Will it enhance the end user's experience?

Ed: There are a number of approaches we can take with standards development when we recognize a need, and SirsiDynix has pursued all of them. One approach is to partner with others to develop a needed standard or to work on a project that has already been announced or is underway. Alternatively, we can create a proprietary standard where a gap exists and then make it openly available, such as we did with the Acquisitions Vendor Interface Port that allows acquisitions staff to

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query availability and pricing from book jobbers from within the library system. We openly shared the interface with any interested book jobbers and often a library would require the jobber to use the standard, which is frequently how standard adoption works. The problem with this approach is that the standard may or may not get picked up by competitors. An approach that encourages competitors to work together is to take a standardization need to organizations like NISO to foster the development in a neutral environment, which is how the Cost of Resource Exchange (CORE) project came about.

Q Tell the ISQ readers more about the CORE project. How exactly did that come about and what is the standard expected to accomplish?

Ed: The CORE project was proposed by myself, Jeff Aipperspach from Serials Solutions, and Ted Koppel from Auto-Graphics. We all recognized a need to be able to have an ILS and an ERM system interact to populate the ERM system with financial acquisitions data. Such a capability would enable both real-time lookups and make cost-related reports in the ERM more accurate and timely. It would also eliminate the need to write numerous custom programs to move data between each ERM and ILS and reduce or eliminate manual entry by library staff of the same data in both systems. We were pleased when NISO agreed last year to support the project and I accepted the appointment of co-chair along with Ted Koppel. In only eight months, the CORE working group developed a draft standard that was issued this April for a one-year trial. It was my first experience in co-chairing a standards development group and was a great learning experience and fun as well.

Anne: The implementation of the CORE draft standard is on our roadmap for a coming release and we plan to test it with any ERM vendors that implement the standard during the trial period.

Q What areas do you feel would benefit from further standards or best practices development?

Berit: A DLF interoperability project started in 2008 is looking at standards that will allow additional points of interoperability between library systems, for example, how changes to a bibliographic database record could be promoted to another service, or how applications in any language can still interact. With the DLF merger into CLIR, I hope to see that project continue.

Ed: Authentication is a huge area that needs further standards work. We have standards like Shibboleth and LDAP, but we need to apply them more specifically to a library environment. I'm very interested in NISO's new authentication initiative [Single Sign-on Authentication] and getting a better understanding of the problem, especially from the customer's viewpoint.

The CORE project addresses a need to be able to have an ILS and an ERM system interact to populate the ERM system with financial acquisitions data.

Anne: The School Interoperability Framework (SIF) for K-12 could have some interesting implications for libraries. There are lots of technologies involved and issues with patron updates and fees. There could be some opportunities for some quick hit best practices.

Berit: SIF is an enterprise level framework and some of the certification methods are pretty expensive to implement; a simpler certification for fewer functions would be useful.

I also think there is a huge opportunity with e-books, which are becoming an increasingly large part of a library's collection. There are too many products and technologies in this area that don't interoperate. We also don't have good usage models that simplify combining e-book usage with circulation statistics.

Q Is there anything else you would like to tell ISQ readers about SirsiDynix and standards?

Berit: Support of standards is a core value of SirsiDynix. No other ILS provider has been as active and successful in the NCIP standard's development and implementation. We will continue to take advantage of NISO and other standards that are important to our customers and that offer opportunities for improved products and capabilities. We also plan to expand our "software as a service" solutions so that our library customers can spend their staff time on serving their customers rather than supporting an information infrastructure. | QA | doi: 10.3789/isqv21n3.200905

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RELEVANT LINKS

SirsiDynix website
www.sirsidynix.com

CORE Working Group
www.niso.org/workrooms/core

NCIP Implementers Group
www.ncip.info

School Interoperability Framework
www.sifinfo.org

SUSHI READY

ANSI/NISO Z39.93-2007
THE STANDARDIZED USAGE STATISTICS HARVESTING INITIATIVE (SUSHI) PROTOCOL

Easy Access to COUNTER Reports

SUSHI is a protocol that can be used by electronic resource management (ERM) and other systems to automate the transport of COUNTER-formatted usage statistics. It can also be used to retrieve non-COUNTER reports that meet the specified requirements for retrieval by SUSHI.

Standard, Schema, WSDL...

The SUSHI standard is the high-level framework in which the SUSHI Schema, SUSHI WSDL, and COUNTER reports operate. The SUSHI WSDL describes how the client and server sides of the web services transaction will interoperate. The schema describes the XML that is used to perform the SUSHI operation. A COUNTER XML report is the actual payload of the transaction.

Available Schemas

Three supporting XML schemas are posted on the NISO website: two SUSHI schemas which are basically retrieval envelopes for the XML-formatted COUNTER report, and a COUNTER reports schema, which in turn creates an XML-formatted version of the requested report.

SUPPORT FOR IMPLEMENTATION

Schemas and Greatly Improved Supporting Materials
NOW AVAILABLE to Assist Adoption

The NISO SUSHI Standing Advisory Committee announced in November 2008 the approval and final release of SUSHI schemas (and related files) providing full support of Release 3 of the COUNTER *Code of Practice for Journals and Databases*. Notable in this latest release of the COUNTER *Code of Practice* is the requirement that content providers implement SUSHI as a means of delivering their reports (deadline: August 2009).

With the final schemas and additional support now available on the SUSHI website, content providers can be confident about setting their development agendas for implementing SUSHI. Visit the site to find:

- ✓ Clear, graphical representation of the schemas
- ✓ Sample code to assist with implementation and testing
- ✓ Updated FAQs, including sections specifically for librarians and for developers
- ✓ And even more support documents, presentation materials, and other resources.

NISO

www.niso.org/workrooms/sushi

Tony O'Brien

Tim Shearer

TONY O'BRIEN AND TIM SHEARER

NISO's Discovery to Delivery Topic Committee: Ensuring End User Access to Information

The Discovery to Delivery (D2D) Topic Committee is one of three topic committees within NISO responsible for managing NISO's portfolio of standards and overseeing the working groups that are developing new standards and best practices. D2D focuses on the location and retrieval of information and its distribution to the end user. This includes such topics as metasearch, OpenURL, user interfaces, web services, and physical and electronic delivery services.

The Internet and the web have significantly changed the way that publishers and libraries provide information to the end users. To ensure that standards keep up with this fast-changing environment, the D2D Topic Committee recognizes that:

1 **Standards must be lightweight and practical.** Smaller, modular protocols focused on solving specific problems and that can be developed and implemented quickly are preferred over large, complex "do it all" solutions. The multi-year standard development project is no longer viable with the speed in which the computing environment changes.

2 **Interoperability is more critical than ever.** NISO's standards have always been about interoperability, but usually they focused on allowing interoperability between locally installed vendor systems. While that is still important, interoperability today is often an on-demand experience that could involve dozens of different systems in the "cloud" of the Internet. The increasing interest in the software as a service model will make it even more important that any local system be able to interoperate over a network using a service oriented architecture.

3 **Ad hoc efforts must be leveraged.** Many standardization efforts start with a few individuals or a niche community working to solve a specific problem for themselves. These efforts can often be leveraged by NISO to extend such ad hoc standards and bring it to a larger community.

4 **Adoption is the measure of success.** A standard is only useful if it is adopted by a critical mass of stakeholders. In the past, this critical mass was only within the NISO community. Today, NISO's own community is expanding to encompass a broader range of content and system providers. Additionally, our interest areas increasingly overlap those of other communities, such as general web standards development, e-learning, and research data to mention a few. We need to reach out to these other communities both during and after standards development to ensure that the resulting standard can and will be adopted by all affected parties.

Existing Standards

Within the portfolio of standards that D2D oversees are two of the most used and well-known standards within NISO: Z39.50 and OpenURL. Both of these standards are currently undergoing their periodic review.

Z39.50, *Information Retrieval: Application Service Definition & Protocol Specification*, in many ways paved the way for today's web-connected environment. At a time when there was no public Internet, this standard allowed library end users to connect to and search the catalogs of libraries in geographically distant locations. The standard has been widely used and continues to underpin a significant amount of search and retrieval in the metasearch environment. While there has been much discussion of whether Z39.50 is obsolete in today's environment, many libraries are still using it and many information systems support

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NEW NISO D2D INITIATIVES

1 Knowledgebase And Related Tools (KBART)

Knowledgebase And Related Tools (KBART) is a joint project with the UK Serials Group (UKSG) launched in 2008 to develop and publish guidelines for best practice to effect smoother interaction between members of the knowledge base supply chain. This initiative is a perfect example of how success with one standard—OpenURL—creates the need for another standard or recommended practice. UKSG's 2007 report on *Link Resolvers and the Serials Supply Chain* found that a lack of awareness on the part of many publishers of the OpenURL's capabilities and requirements was impacting the quality and timeliness of data they provide to populate knowledge bases, and thus undermining the potential of this sophisticated technology. The KBART working group, co-chaired by Peter McCracken (Serials Solutions), Sarah Pearson (University of Birmingham), and Charlie Rapple (Publishing Technology plc), is in the final stages of drafting their recommended practice and is establishing a test group.

2 Single Sign-on (SSO) Authentication

NISO members recently approved a new initiative under the D2D purview for **Single Sign-on (SSO) Authentication** to create one or more recommended practices that will explore practical solutions for improving the success of SSO authentication technologies and to promote the adoption of one or more of these solutions to make the access improvements a reality. This effort is the result of NISO's new Chair's Initiative, an annual project of the chair of NISO's Board of Directors. NISO's Chair at the beginning of 2009, Oliver Pesch (Chief Strategist, EBSCO Information Services), identified single-sign-on authentication as an area that would benefit greatly from study and development within NISO. He asked that it focus on a solution that will allow a content site to know which authentication method to use without special login URLs, in order to provide a seamless experience for the user. The working group roster for this group was finalized and Harry Kaplanian (Serials Solution) has agreed to co-chair; a second co-chair will be solicited from the working group when work is started in September 2009.

3 Physical Delivery of Library Resources

D2D approved a proposal in July for a new project to develop recommended practices for the **Physical Delivery of Library Resources**. While the majority of attention today is given to electronic resources, physical items continue to be delivered to patrons and borrowed between libraries—and use is even growing. The proposal cited studies showing increases in borrowing and lending of over 100% in the last six years and over 10 million transactions annually through the OCLC interlibrary loan system alone. The increased volume and costs of library delivery is creating a demand for more information about how to run efficient and effective delivery operations. This project, building on the efforts of three recent projects: Moving Mountains, Rethinking Resource Sharing's Physical Delivery Committee, and the American Library Association's ASCLA ICANS' Physical Delivery Discussion Group, is intended to develop a statement of standard practices related to the delivery of library materials. The document is expected to include recommendations for: packaging, shipping codes, labeling, acceptable turn-around time, lost or damaged materials handling, package tracking, ergonomic considerations, statistics, sorting, a set of elements to be used for comparison purposes to determine costs, linking of regional and local library carriers, and international delivery. At the time of writing this article, the proposal was just approved by the NISO voting members as a new initiative; formation of the working group is underway.

CONTINUED »

it. For that reason, the D2D committee recommended that the standard be reaffirmed for another five years.

Simultaneously, though, D2D is reviewing the draft standard developed by the NISO Metasearch working group: *Information Retrieval Service Description Specification* (Z39.92). This standard is built on the work of the Z39.50 Next Generation ad hoc group (ZING) and their ZeeRex specification. The Z39.92 draft standard defines an information retrieval model that includes but is not limited to those services made available via the Z39.50, SRU/SRW, and OAI protocols. It is expected that this standard will be presented to the NISO voting members for approval in the near future.

The OpenURL Framework for Context-Sensitive Services (ANSI/NISO Z39.88) is also due for its five-year review. NISO has begun the voting pool formation and D2D is reviewing this heavily used standard to determine whether to recommend reaffirmation or revision.

Also in the D2D portfolio is the *NISO Circulation Interchange Protocol* (NCIP). This standard has a very active Implementers Group (IG) and a Maintenance Agency managed by EnvisionWare. The first version of this standard did not receive the expected adoption, largely due to its perception of being overly complex to implement along with some commercial barriers which prevented libraries from purchasing NCIP support. The NCIP-IG undertook a revision to the standard to both streamline it and make it more extensible. Version 2 was published in 2008 and the NCIP-IG is now working to promote its adoption. Among their recent efforts is the identification of an NCIP Core Message set consisting of nine primary NCIP messages. The group believes that the NCIP Core Messages will support more than 80% of the current functionality for resource sharing and self-service applications.

Future Direction

As part of their responsibility to identify where new standards may provide solutions, D2D is pursuing what may be needed in what they have dubbed "last mile" services. These include identity services and next generation delivery where reduced mediation and simpler systems are needed. Anyone who has comments on these "last mile" services or any other work undertaken by D2D is encouraged to contact the co-chairs.

| NR | doi: 10.3789/isqv21n3.200908

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Members of D2D Topic Committee

RELEVANT LINKS

D2D Topic Committee
http://www.niso.org/topics/d2d/

Link Resolvers and the Serials Supply Chain report
http://www.uksg.org/projects/linkfinal

KBART Working Group
http://www.niso.org/workrooms/kbart

SSO Working Group
http://www.niso.org/workrooms/sso

Physical Delivery of Library Resources proposal
http://www.niso.org/apps/org/workgroup/d2d/document.php?document_id=2419

Moving Mountains project
http://clicweb.org/movingmountains/

Rethinking Resource Sharing's Physical Delivery Committee
http://www.rethinkingresourcesharing.org/delivery.html

www.niso.org/news/events

FALL 2009 NISO EVENTS

NISO—the only organization that focuses on the intersection of libraries, publishers, and information services vendors—holds educational programs on topics of interest to the community throughout the year.

SEPTEMBER 2009

September 9 & September 16 - Two Part NISO Webinar: E-Resources Licensing: The Good, The Bad, The Ugly
Includes discussion of NISO's Shared E-Resources Understanding (SERU)

OCTOBER 2009

October 12–13 - Forum: Library Resource Management Systems | *Boston, MA*
October 14 - NISO Webinar: Bibliographic Control Alphabet Soup: AACR to RDA and evolution of MARC

NOVEMBER 2009

November 11 - NISO Webinar: Data, Data Everywhere: Migration and System Population Practices

DECEMBER 2009

December 9 - NISO Webinar: ONIX for Publication Licenses: Adding Structure to Legalese
Includes an update on the Electronic Resource Management Initiative (ERMI)

NISO Open Teleconferences

Join NISO on these free conference calls to learn about new projects within NISO as well as to provide the organization with feedback and input on areas where NISO ought to be engaged. NISO teleconferences are held from 3-4 p.m. (eastern) on the second Monday of each month. To join, simply dial 877-375-2160 and enter the code: 17800743.

ISQ CALL FOR CONTRIBUTIONS

Information Standards Quarterly (*ISQ*) is NISO's print and electronic magazine for communicating standards-based technology and best practices in library, publishing, and information technology, particularly where these three areas overlap. *ISQ* reports both on the progress of active developments and also on implementations, case studies, and best practices that show potentially replicable efforts

The editors of *ISQ* are seeking contributions from the NISO and general information communities to future issues of *ISQ*. We are looking for features, conference reports, or opinion pieces. The standards / best practices covered in ISQ are not limited to those produced by NISO. Discussions of formal and defacto standards and best practices of any organization in relevant areas of library, publishing, and information technology are candidates for inclusion.

E-mail the Content Editor (editor@niso.org) with proposals prior to submitting full manuscripts.

ISQ has an international readership and we encourage submissions from other countries (in English).

FOR MORE INFORMATION, VISIT: www.niso.org/publications/isq/contribute/

National Information Standards Organization • One North Charles Street, Suite 1905 • Baltimore, MD 21201 • 866.957.1593 • www.niso.org

CR [CONFERENCE REPORT]

Fiona Bradley

FIONA BRADLEY

Quantitative and Qualitative Methods in Libraries International Conference

The importance of research in demonstrating the value of libraries was a strong theme at the *Quantitative and Qualitative Methods in Libraries International Conference* (QQML) held in Chania, Greece, May 26–29 2009.

The International Federation of Library Associations and Institutions (IFLA) participated in QQML and organized a special session on experiences in the use of impact assessment. Case studies in using impact assessment were presented by grantees of the Bill and Melinda Gates Foundation's Global Libraries Initiative. Presenters from Romania, Latvia, and Lithuania described how impact assessment is a powerful tool for changing attitudes and actions towards libraries, as well as a tool for advocacy and fundraising. However, measuring the impact of activities is not without its challenges. **David Streatfield (Information Management Associates, UK)** described the importance of defining appropriate measures and ensuring the collection of information that will help you evaluate why and how things go wrong in order to improve services, instead of focusing purely on the positive. Only with this broad view can impact data then be used for advocacy.

Peter Hernon (Simmons College, USA) kicked off the conference program with an argument that as a management-orientated field, it is important to study the qualities of the leaders in our profession. Important too, Hernon stressed, is the need to improve the quality of research and variety of research methods in our profession and build a chain of reasoning into the way work is reported. **Niels Ole Pors (Royal School of Library and Information Science, Denmark)** challenged delegates to question the gaps between library staff and users in their perceptions of public library services, and to analyze the adoption of "organisational recipes" in favor of management standards that stand up over time. Are new services, spurred by technology, the ones users want most, or are they best served by traditional services? ALA President **Jim Rettig (University of Richmond, USA)** explored the rise of Internet media and the need to consider the intersection between information literacy and civic literacy.

Performance measurement was a strong theme, with presenters examining the use of a variety of research and management methods from Balanced Scorecard in Germany, to metrics for digital libraries in the Netherlands, and LibQUAL+®, used in a growing number of countries. Demonstrating the value of individual services and their contribution to library services is increasingly important, in an era when funding for many libraries is constrained.

Throughout the program, many argued for the need for practitioners to improve their research skills and to increase the breadth of research methods in their toolkit. They noted that research doesn't always come easily to librarians, who may not always be inclined to engage with quantitative methodologies or who may not always have the skills and access to training they need to acquire knowledge of a wider range of methodologies. Librarians need to broaden the methods they use to find different ways of highlighting the value of librarians. Threats to professionalism highlighted by **Judith Broady-Preston (Aberystwyth, UK)**, such as the increasing use of generic competency frameworks by employers, highlight the need to rigorously evaluate and report on the impact and value of library services and the librarians who provide them. Highlighting the benefits of learning research methods, students from the International Master in Digital Library Learning at Tallinn University, Estonia, presented results from their masters projects on topics including skills for digital library work and case studies on open access.

Around 150 delegates from 50 countries attended the conference. QQML will return to Chania in May 2010. | CR |

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RELEVANT LINKS

QQML Proceedings and Pictures
www.isast.org/proceedingsQQML2009/

IFLA
www.ifla.org/

LibQUAL+
www.libqual.org/

Todd Carpenter

TODD CARPENTER

ISO TC46 Nairobi Meeting Report

Every year in May, the ISO Technical Committee (TC) 46 on Information and Documentation holds its plenary meeting. In addition to the overarching TC meeting, the separate subcommittees—SC 4 (interoperability), SC 8 (statistics and performance measures), SC 9 (identifiers and description) and SC 11 (archives and records management)—also have the opportunity to meet. NISO coordinates sending a U.S. delegation to the meetings to participate in the plenary meetings as well as the various working groups that meet throughout the week.

This year's meeting of TC 46 was held in Nairobi, Kenya, hosted by the Kenya Bureau of Standards (KEBS). Because of the difficulties of travel to Kenya and the associated costs in today's tight budget environment, the meeting was relatively small compared to previous years. It was, however, a productive meeting.

This year was the first with new leadership of TC 46, with **Françoise Pellé**, Director of the ISSN International Centre, as chairperson and **Katell Gueguen** of AFNOR as the new Secretary. Françoise Pellé has long been an active leader in international standards work in our community. Katell Gueguen is a Standardization Project Manager within AFNOR and has a background in libraries. Both are off to a great start in their new roles leading the work of TC 46.

Among its portfolio of work, TC 46 manages the standards for international country and language identification codes, which are critical to industry and government.

Among its portfolio of work, TC 46 manages the standards for international country and language identification codes, which are critical to industry and government. One important development relates to overlap between TC 37 (Terminology) and TC 46 on the topic of language codes that are defined in ISO 639. TC37 is planning to transform and/or merge all parts of ISO 639 into a single database standard under its auspices. TC 46 has requested that its member bodies nominate experts to participate in the current working group within TC 37 and to review the work done thus far. TC 46 has also undertaken work to revise ISO 11799, which specifies the characteristics of general-purpose repositories used for the long-term storage of archive and library materials.

Although SC 4 and SC 8 did not meet during the plenary week in Nairobi, SC 9 and SC 11 held both working group and plenary meetings.

The SC 11 group was most active, with seven of the working groups meeting including: metadata for records, digital records preservation, records management systems, records digitization, risk assessment, and conversion and migration. A significant achievement for SC 11 is the transformation of their standards portfolio into a coordinated Management System Standards (MSS) framework. In addition to making each standard part of an inter-related family where each standard builds on the others, an MSS can help to raise the visibility of records as something that needs to be managed in a "systematic" way. Two new standards to establish an overarching vocabulary, fundamentals, and requirements for the MSS were approved for development and have since been issued for ballot. SC 11 meets semi-annually; their next meeting will be held in Orlando, FL, on October 19-23, 2009.

The SC 9, which is managed by ANSI/NISO as Secretariat, held two meetings in addition to their plenary—the identifiers interoperability group and the International Standard Name Identifier (ISNI) working group. The interoperability group has launched a new ad hoc project to develop a semantic mapping of the metadata linkages between the various SC 9 identifiers (ISBN, ISSN, ISMN, ISTC, DOI, ISNI, etc.) The goal of that work is to provide a seamless framework that content providers, distributors, sellers, and libraries can all use to identify and interlink the various instances and expressions of a work in the marketplace. There are a lot of ISO projects, which are headed for Draft International Standard ballots later this fall, now that a number of legal and policy questions regarding the registration agencies are nearly settled.

Due to the nature of the identifier standards in its portfolio, SC 9 has a number of maintenance or registration agencies under its auspices. These agencies provided reports for the meeting, which included these items of interest:

- The ISAN has been adopted by ITV, one of the main private national broadcasters in Great Britain; by the Advanced Television System Committee (ATSC), the Standard for Digital Broadcasting adopted in USA , Canada, and Latin America among other locations; and as the preferred content identifier in the European standard EN 15744:2009, which aims to enable better indexing and exchange of cinematographic works between European countries.
- The delivery of V-ISANs has doubled in the last 12 months [as of May 2009], reaching more than 12,000 delivered mainly for the optical disk versions of audiovisual content.
- The International ISBN Agency has set up a working group to investigate the feasibility of assigning ISBNs to the tens of millions of books published before the introduction of ISO 2108 in 1970.
- The first ISBN 979 prefixed group identifier (979-10) has been assigned to the French ISBN agency and will come into use during the fall of 2009. Since there are still plenty of 978-prefixed group identifiers for countries requiring smaller quantities of ISBNs, the two ranges will run in parallel for the foreseeable future.
- The revised ISMN standard to be published in 2009 [now available] expands the ISMN to 13-digits. A revised Users' Manual was made available in advance of the standard's publication and a smooth transition is expected.
- The U.S. ISRC Agency has developed a website to process Registrant Code allocation and provide improved documentation on ISRC assignment. This has been designed in a modular way to allow reuse in other contexts. Initial intentions are to repurpose the website to serve territories that are currently served directly by the International ISRC Agency and work has started on doing this for Korea. The International ISRC Agency expects to make the use of the U.S. developed website mandatory for new Registration Agency appointments.
- The implementation of the ISSN-L function was carried out, in 2008, on the whole ISSN Register. Among the 1,403,000 ISSN-L designated through May 15, 2009, there were nearly 45,000 ISSN-L for resources published on different physical media. The ISSN-L are available in all the bibliographic records of the ISSN Register and also in a table accessible on the ISSN International Centre website.

Among the 1,403,000 ISSN-L designated through May 15, 2009, there were nearly 45,000 ISSN-L for resources published on different physical media.

- The contract appointing the International ISTC Agency Ltd as the Registration Authority for the ISTC standard (ISO 21047) was signed with ISO in January 2009. A centralized, web-based system called the Standard Text Registration System has been established for all registration agencies to use.
- The ISWC International Agency deployed a new website that includes an online database of assigned numbers. A new code allocation methodology requires all new codes to be validated by a central registry.
- Linkages between the ISWC and ISTC are being explored for lyrics.

The next meeting of TC 46 will be held in Korea at the invitation of KATS, the Korean national standards body, the week of May 17-21, 2010. Sam Oh, the Chairman of SC 9 and professor of information sciences Sungkyunkwan University, is arranging the details with the support of his Korean colleagues.

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TODD CARPENTER <tcarpenter@niso.org> is the Managing Director of NISO and the Secretary of ISO TC46/SC9.

RELEVANT LINKS

International ISBN Agency
www.isbn-international.org/

International ISMN Agency
ismn-international.org

International ISRC Agency
www.ifpi.org/isrc

International ISTC Agency
www.istc-international.org/

ISAN International Agency
www.isan.org/

ISSN International Centre
www.issn.org

ISWC International Agency
www.ISWC.org

NISO STAFF

NISO/BISG Forum: The Changing Standards Landscape for E-Books

NISO and the Book Industry Study Group (BISG) held their third annual half-day *Changing Standards Landscape* forum on July 10 in Chicago. The focus this year was on e-books. The market for electronic books has expanded rapidly in the past year. With the release of new readers and ever increasing amounts of new content, it is likely that this growth will continue and expand in the coming years.

Many of the existing standards, workflows, and business models for print books need reconsideration in an e-book environment. The forum was segmented to focus on the different stages in e-book production and use:

- Identify and describe
- Format, discover, and retrieve
- Purchase and use

1 International Standard Text Code

Andy Weissberg, *Bowker*

Andy Weissberg kicked off the forum with a discussion of the International Standard Text Code, a newly approved ISO standard (ISO 21047:2009) that provides a means of uniquely and persistently identifying textual works in information systems, and facilitates the exchange of information about these works between every point in the supply chain on an international level. The same ISTC is applied to a work regardless of its format and can serve to link the hardback, paperback, large-print, e-book, and audio versions of the same content, even when issued by different publishers. (See the article on page 20 for more information on the ISTC.)

> The ISBN and ISTC can work for e-books much like the method used in the music industry where an ISWC identifies a song and separate ISRCs are assigned to each recording of the same song.

2 ISBN Identifier for E-books

Mark Bide, *EDItEUR*

Mark Bide focused on the use of the ISBN identifier for e-books, pointing out that the 4th edition of the standard (ISO 2108), published in 2005, provided explicit guidelines for e-books. Each different product form and each different electronic format are required to have a separate ISBN. The ISBN, then, identifies a unique instance of a book, while the ISTC can act as a collocator for the same content in different formats. This is much like the method used in the music industry: an ISWC identifies a song and separate ISRCs are assigned to each recording of the same song.

3 EPUB Standard for E-book Formats

Mike Smith, *IDPF*

Mike Smith reviewed the EPUB standard for e-book formats, which is actually a family of open, non-proprietary standards that specify an XML-based format for downloadable digital books. EPUB formatted books work on at least 13 different e-book readers and the standard has tremendous support from publishers and distributors in the supply chain.

There is more than one type of e-book and many are more than just facsimiles of print. E-books are only going to get more interactive and complex.

4 BISG BookDROP project

Michael Healy, *BISG*

Michael Healy described the BISG's BookDROP project for helping users discover online book content, while allowing publishers to manage the quality and availability of their content. The standard, published in December 2008, defines a set of HTTP transactions between a publisher's digital book archive and the websites of the publisher's syndication partners.

5 Digital Rights Management (DRM)

Suzanne Kemperman, *OCLC*

Suzanne Kemperman addressed the issue of Digital Rights Management (DRM), which she described as a balance between piracy and open access. DRM allows publishers and authors to protect their digital works and the revenue they need to continue in the business of providing content. DRM-free e-books would require better business models and willingness by libraries to pay for access and use.

6 Standardized E-book Model

John Cox, *John Cox Associates*

John Cox considered if and how a standardized e-book model could be developed. There is more than one type of e-book and many are more than just facsimiles of print. E-books are only going to get more interactive and complex. Additionally, different market segments will require different business models. Possible organizational approaches include the subscription model, FTE weighting, or size categorization. Possible user payment models could include purchase, subscription / rental, pay per view, or small micropayments. A variety of non-monetary issues related to access and usage rights also need to be addressed. He concludes that the e-book business is still too young and too varied to standardize on a business model right now.

7 The Use of E-books in a Library Context

Sue Polanka, *Wright State University*

Sue Polanka closed out the forum with a view on the use of e-books in a library context. She identified five areas in need of standards or best practices in managing e-books. These are:

- A standard non-proprietary format for metadata
- Vendor neutral and robust MARC catalog records for e-books
- Capability to simultaneously purchase the print and e-book formats using the same process and workflow
- Easy, perpetual, local and remote access with ILL rights
- One common, non-proprietary interface for using e-books that is interoperable across different platforms

| CR | doi: 10.3789/isqv21n3.200910

RELEVANT LINKS

NISO/BISG E-books Forum Presentation Slides
www.niso.org/news/events/2009/ala09/bisg/

International ISTC Agency
www.istc-international.org/

International ISBN Agency
www.isbn-international.org/

BookDROP
www.bisg.org/what-we-do-16-28-bookdrop-10.php

Beatrice Pulliam

BEATRICE PULLIAM

Rethinking Resource Sharing (RRS) Forum IV 2009

The Rethinking Resource Sharing group held their fourth forum, RRS Forum IV 2009, on May 13–14, 2009, in Dublin Ohio. This working meeting featured four speakers, each followed by break-out sessions for the RRS Working Groups: Policies, User Needs, Interoperability, Materials Delivery, and Marketing. This report summarizes the speaker presentations.

1 Rethinking Resource Sharing

Ed Rothman, ***Professor of Statistics and Director of CSCAR (Center for Statistical Consultation and Research), University of Michigan***

Often, the thought of trying to wrap your brain around management techniques used mostly in big business environments can be pretty daunting. **Ed Rothman** opened the Forum with an intriguing introduction to the Deming technique and its implications for resource sharing in libraries. The technique is named for W. Edward Deming, an American statistician credited with transforming the Japanese auto industry from low to high quality. Deming uses a systems approach to workflow optimization. According to Rothman, this system thinking is a "collection of components that come together repeatedly for a purpose." In contrast to management approaches that tend to put more emphasis on specific aspects of a system (optimizing efficiency, etc.), Deming focuses on the overall purpose of a system with success being measured by how an organization *moves toward* achieving the purpose. Outcomes are important, but not merely in a quantitative sense. This systems approach seems quite scalable for tackling not only resource sharing issues, but other cross-functional library issues as well. Rothman encourages "living in the question longer"—for us, also known as the information interview—something we all use in our daily service to patrons and, arguably one of our best, most reliable tools surviving the 2.0 frenzy. Rothman offers a simple and general example: instead of asking someone "why they spilled the milk, ask why the milk was spilled?" The first question just wastes time. Attempt to move upstream in the process by avoiding getting caught up in the symptoms. Ask "why" repeatedly until you come up with a common purpose. Any purpose can be achieved once it is identified. Rothman urges us to spend "more time dealing with the white space between processes, as this is where the big gains can be made."

Rothman offers a simple and general example: instead of asking someone "why they spilled the milk, ask why the milk was spilled?"

2 Global Issues for Resource Sharing

Katie Birch, ***OCLC Delivery Services, UK***

After a break for the morning working group discussions, **Katie Birch** provided an overview of the state of current global issues in resource sharing. Birch framed the discussion with the following question: Are libraries in the import/export business? Birch attributes the growth in global resource sharing to technological advances making communication easier and to higher patron expectations that have challenged "traditional ILL methods and policies." OCLC projects that sharing requests to the US will reach nearly 95,000 (from 29 countries) and requests from the US will top 85,000 (to 42 countries). Copies make up the majority of both imported and exported requests (with most of US exports going to predominately English speaking countries). One commonality between the US and Global resource sharing partners is the fact that they both look to fulfill requests the same way: locally, consortially, nationally, and finally internationally. Birch noted some barriers, including closed vs. open stacks, formal vs. informal networks, payment preferences, and shipping. When it comes to returnable requests, many US libraries suffer from a case of "hydrophobia" (a morbid dread of mailing books over large bodies of water). We could stand to take a lesson from smaller global resource

sharing partners, many of whom are accomplishing more in less time with informal networks and without experiencing "paralysis through analysis."

3 Resource Sharing Remixed

Michael Edson, *Director, Web and New Media, Smithsonian Institution*

Michael Edson's presentation fit nicely in the canon of the "Don't Make Me Think" philosophy (Steve Krug, et al.) that is useful for both web design and systems problem-solving. Edson gave an overview of the Commons concept (for the Smithsonian, it is a set of resources maintained in the public sphere) and spoke broadly about the Smithsonian's challenges with sharing its digital resources and its experience having a completely open strategic planning process. Edson also offered some practical advice to affecting change in slow-moving organizations. As an alternative to the traditional committee process, the Smithsonian's web and media strategic planning was "wiki-cast," along with using other social networking tools. Edson believes this approach is a way to successfully expand the internal brain trust of an organization undergoing major change, and offered other examples of the ascendance of free commons models.

4 Open Source Software for Libraries and the Open Access Initiatives

Mark Leggott, University Librarian, University of Prince Edward Island (UPEI)

Mark Leggott's presentation explored open source software opportunities available for libraries and gave an overview of some of the open access initiatives taken at UPEI (full integration of OpenLibrary and Fedora). Leggott picked up where Michael Edson left off in the discussion of open and closed systems. Various iterations of open and closed (also referred to as "black boxes") systems were described as transmogrifications, and comparisons were drawn between specific types of ILS systems and repositories (i.e., commercial systems like OCLC WorldCat or Google Books vs. Open Archive, etc.). Leggott struck a nerve among attendees and organizers when he was openly critical about OCLC's then proposed changes to Record Use policy. The proposed changes have since been reversed. | CR | doi: 10.3789/isqv21n3.200912

BEATRICE PULLIAM <bpulliam@providence.edu> is Library Commons Librarian for Technology and Access at Providence College and Co-Chair of the RRS User Needs Committee.

Innovation Awards

This year's RRS innovation award winners were:

Orlando Memory Project – An open-source, community-based digital repository launched by the Orange County Library System in Orlando, Florida.

Rapid ILL – A resource sharing system designed by the ILL staff at the Colorado State University Libraries in response to a devastating flood that shut down ILL service for the Libraries in July 1997. This system provides fast and cost effective article requesting and document delivery via Interlibrary Loan.

Kentucky Libraries – Unbound – A public library effort that combines Overdrive technology with a local content project to deliver e-books, audiobooks, video, and music content to communities. Nearly ninety percent of the content currently delivered is e-books.

RELEVANT LINKS

RRS Website
rethinkingresourcesharing.org/

Deming technique: If Japan Can... Why Can't We?
en.wikipedia.org/wiki/If_Japan_can..._Why_can't_we%3F

Rothman presentation slides
rethinkingresourcesharing.org/forum09/docs/System_Thinking.pptx

Birch presentation slides
rethinkingresourcesharing.org/forum09/docs/rethinking.ppsx

Edson presentation slides
www.slideshare.net/edsonm/michael-edson-resource-sharing-remixed%20

Smithsonian's "wiki-cast"
smithsonian-webstrategy.wikispaces.com/

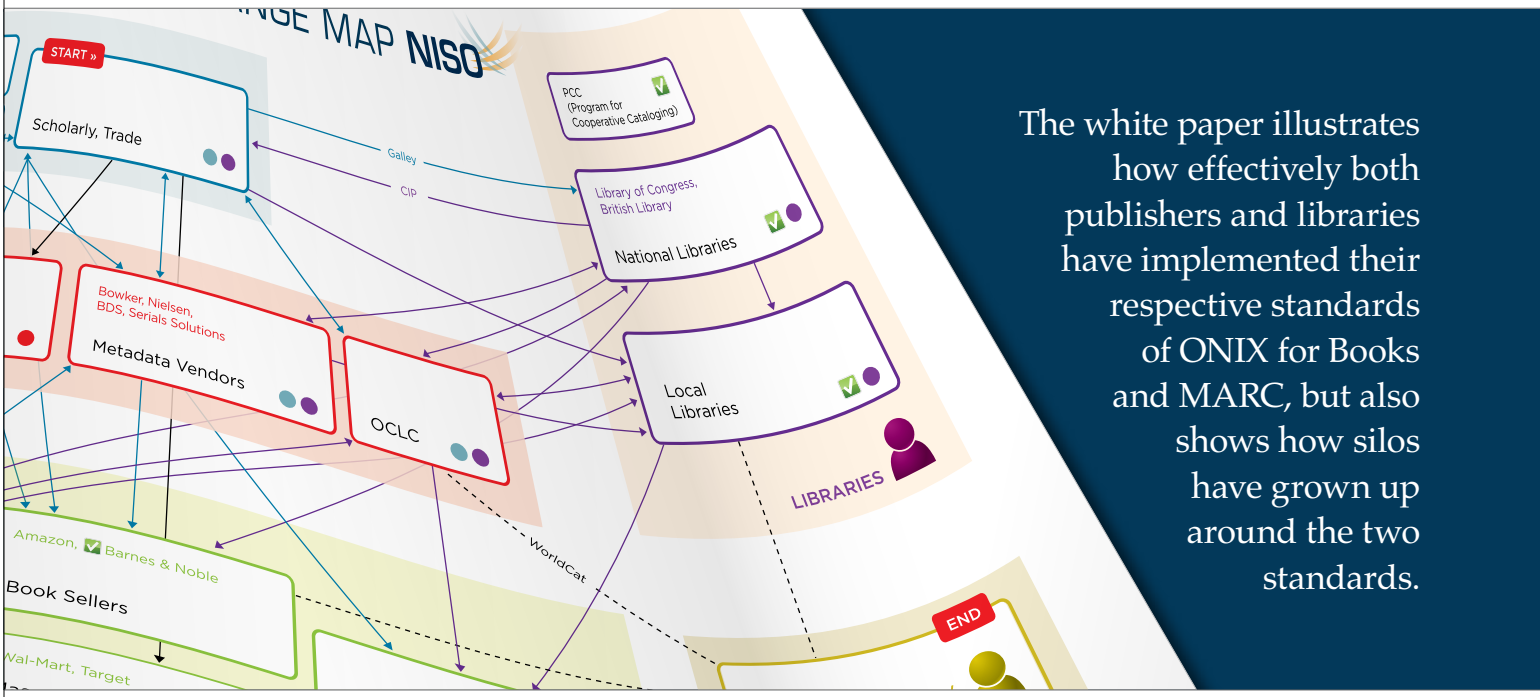
Mark Leggott's Loomware blog
loomware.typepad.com/loomware/

OCLC announcement about its Record Use policy
vidego.multicastmedia.com/player.php?p=v07n97t9

Orlando Memory Project
dc.ocls.info/

Rapid ILL
rapidill.org/

Kentucky Libraries Unbound
kyunbound.lib.overdrive.com/



The white paper illustrates how effectively both publishers and libraries have implemented their respective standards of ONIX for Books and MARC, but also shows how silos have grown up around the two standards.

White Paper Discusses Need for Streamlining Book Metadata Workflow

NISO and OCLC have jointly published a white paper on *Streamlining Book Metadata Workflow* by Judy Luther (Informed Strategies) that analyzes the current state of metadata creation, exchange, and use throughout the book supply chain. With the number of book formats multiplying and the amount of digital content growing rapidly, the metadata required to support the discovery, sale, and use of content by a global audience is increasing exponentially. At the same time, economic pressures on all stakeholders in the supply chain from publishers, wholesalers, booksellers, metadata vendors, and librarians present greater challenges to providing quality and comprehensive metadata at every point in the cycle. Through interviews with over 30 industry representatives, Luther has created a book metadata exchange map illustrating the process and has identified opportunities for eliminating redundancies and making the entire process more efficient.

"The white paper illustrates how effectively both publishers and libraries have implemented their respective standards of ONIX for Books and MARC, but also shows how silos have grown up around the two standards," states Todd Carpenter, NISO Managing Director. "There are definite opportunities for breaking down these silos and both communities are eager to find better methods for interoperability and streamlining their operations."

"Efficiently and effectively re-using metadata from publishers supports the continued relevance and success of library bibliographic control going forward," said Karen Calhoun, Vice President, OCLC WorldCat and Metadata Services. "It is important that libraries, publishers, and vendors collaborate in the ongoing development and evolution of best practices and standards in support of web scale services."

NISO and OCLC plan to hold ongoing events to continue the dialog among publishers, librarians, and metadata vendors. Specific actions identified in the report will be pursued with the establishment of working groups to develop recommended practices or standards as needed. ■

RELEVANT LINKS

Streamlining Book Metadata Workflow
www.niso.org/publications/white_papers/

OCLC Symposium for Publishers and Librarians
www.oclc.org/publisher-symposium/

CrossRef Provides Best Practices for Using DOIs with Books

As book content increasingly becomes available in electronic format, publishers are using the Digital Object Identifier (DOI®) to provide persistent identification of the material. CrossRef, an official DOI Registration Agency, has seen DOIs and deposits for books and reference materials grow faster than any other content type for the second year in a row. As of July 2009, more than 1.8 million CrossRef Digital Object Identifiers (DOIs) had been assigned for books.

To aid publishers who wish to register DOIs for books, CrossRef's Book Working Group has issued *Best Practices for Books: Depositing, Linking and CrossRef DOI Use*. The recommendations—which include minimum and recommended book metadata for deposits in the CrossRef system and handling of editions and versions—are designed to:

- Maximize reference linking among books, journals and conference proceedings
- Enhance the discovery, visibility, and usage of book content
- Enhance the user's experience through improved functionality
- Enable the creation of a book citation reporting mechanism which would give book content the visibility, credibility, and metrics that journal content has

CrossRef's FAQ now has information specific to books including discussion of the ISBN-A, an actionable-ISBN made linkable through incorporating the ISBN into the syntax string of the DOI. The ISBN-A application is geared towards supply-chain management and selling of e-books, not just scholarly works. ■

RELEVANT LINKS

Best Practices for Books
www.crossref.org/06members/best_practices_for_books.html

CrossRef FAQ
www.crossref.org/06members/otherdoifaq.html

SUSHI Implementation Tools and Aids Available

Implementation of the *Standardized Usage Statistics Harvesting Initiative (SUSHI)* standard (ANSI/NISO Z39.93-2007) is now a requirement for compliance with Release 3 of the COUNTER (Counting Online Usage of Networked Electronic Resources) *Code of Practice for Journals and Databases*. To assist in implementation, the SUSHI Standing Committee and Developers Forum have created several new tools and aids:

- **How to Start Building A SUSHI Service** – This draft document by Tommy Barker, University of Pennsylvania Library, is a work in progress—and a valuable tool for those interested in getting started with building a SUSHI client.
- **Open-Source Code for SUSHI Client** – Serials Solutions has publicly released code for a SUSHI client to harvest provider reports. The code was written for use with SUSHI servers at ProQuest, CSA, and Chadwyck-Healey, but can be easily modified for use with other providers as well. Librarians can use the code to build their own SUSHI clients.
- **SUSHI Software Development Kit** – EBSCO has developed an open source software development kit (SDK) for developing clients and servers for SUSHI. The SDK includes .Net classes that will facilitate working with COUNTER 3.0 data and SUSHI 1.6 services. The SDK, contains documentation, source code, a sample client, and a sample server.
- **SUSHI Toolkit & Web Client** – The University of Pennsylvania put together a Java client to harvest SUSHI 1.6/COUNTER 3.0 data and released it to the SUSHI community under the Apache 2 License. Currently it is a beta release and only has been tested against Project Euclid.
- **Sample COUNTER Files** – The SUSHI Reports Registry webpage has added links to a number of sample COUNTER reports in XML and CSV formats. These samples are especially useful for testing a SUSHI client/server interaction.
- **Updated FAQs** – The Frequently Asked Questions (FAQs) for SUSHI are targeted to four different audiences: General, Librarians, Content Providers & Consolidators, and COUNTER. The FAQs are being regularly updated as new questions arise.

The SUSHI Developers email discussion list is the best place to ask questions and share implementation experiences. The email archives are available to the public; you don't need to be a list member to view them. ■

RELEVANT LINKS

SUSHI Tools & Other Aids
www.niso.org/workrooms/sushi/tools

How to Start Building a SUSHI Service
docs.google.com/View?docid=d2dhjwd_140d923m7fh

Open Source Code for SUSHI Client
code.google.com/p/sushicounterclient/

SUSHI Software Development Kit for .NET
code.google.com/p/ebscosushisdk/

SUSHI Toolkit & Web Client
https://labs.library.upenn.edu/SushiToolkitDocs/site/

SUSHI Reports Registry
www.niso.org/workrooms/sushi/reports/

SUSHI FAQs
www.niso.org/workrooms/sushi/faq/

SUSHI Developers Email List
www.niso.org/lists/sushidevelopers/

In Memoriam: James Joseph Michael

At the annual American Library Association conference, a memorial resolution was passed honoring James Joseph Michael who passed away at the age of 81 on May 20, 2009. The resolution cites his active participation in ALA and the Library and Information Technology Association (LITA) and his library and information technology career with the St. Louis Public Library and Data Research Associates.

Carl Grant, President of Ex Libris North America and a long-time colleague of Michael, remembered him fondly in his blog. "I'll always remember how he did a demo of the software, showed some wonderfully clever feature and then would turn to the audience of librarians and with a huge grin would ask: 'How does it know?' For those of us who work in the field of library automation and were recruited away from libraries into the business side of librarianship by Jim, we owe him a lot... The most important thing Jim taught me was that as you rose in the organization, you had an obligation to bring along the next generation of leadership."

Michael was a pioneer in the Z39.50 standard's development and implementation and was named a NISO fellow in 1995 in recognition of his extensive work on the development of national and international voluntary standards for libraries, publishing, and information services.

NISO recognizes the many contributions of James Joseph Michael to our community and mourns his loss. ■

RELEVANT LINKS

ALA Resolution
www.niso.org/news/ALA_Michael_Memorium.pdf

Carl Grant blog entry
commentary.exlibrisgroup.com/2009/06/how-does-it-know.html

Online obituary
www.stlouiscremation.com/obits/obituaries.php/obitID/676466

Pilot Program to Use Cloud Technologies to Test Perpetual Access to Digital Content

The Library of Congress National Digital Information Infrastructure and Preservation Program (NDIIPP) and DuraSpace have announced that they will launch a one-year pilot program to test the use of cloud technologies to enable perpetual access to digital content. The pilot will focus on a new cloud-based service, DuraCloud, developed and hosted by the DuraSpace organization. Cloud technologies use remote computers to provide local services through the Internet.

For NDIIPP partners, it is not enough to preserve digital materials without also having strategies in place to make that content accessible. The NDIIPP partners will focus on deploying access-oriented services that make it easier to share important cultural, historical and scientific materials with the world. DuraCloud will provide both storage and access services, including content replication and monitoring services that span multiple cloud-storage providers. Among the NDIIPP partners participating in the DuraCloud pilot program are the New York Public Library and the Biodiversity Heritage Library.

The New York Public Library offers a set of scholarly research collections with an intellectual and cultural range that is both global and local. The DuraCloud pilot program at the library will replicate large collections of digital images from a Fedora repository into DuraCloud. The New York Public Library plans to convert the images from the TIFF format to JPEG 2000 and to serve these images using a powerful JPEG 2000 image engine within DuraCloud.

The Biodiversity Heritage Library provides access to historical journal literature in biodiversity in collaboration with global partners, including the Smithsonian Institution, the Missouri Botanical Gardens, and the Woods Hole Marine Biology Lab. Their DuraCloud pilot will focus on replication of digital content to provide protection for valuable biodiversity resources. The pilot will demonstrate bi-directional replication of content among partners in the United States and Europe. The library will use the cloud-computing capabilities offered by DuraCloud to analyze biodiversity texts to extract key information such as species-related words.

DuraCloud is a cloud-based service developed and hosted by the nonprofit organization DuraSpace. DuraCloud was developed with support from the Gordon and Betty Moore Foundation and The Andrew W. Mellon Foundation. DuraSpace was established by merging Fedora Commons and the DSpace Foundation, two of the largest providers of open-source repository software worldwide.

The mission of the National Digital Information Infrastructure and Preservation Program is to develop a national strategy to collect, preserve, and make available digital content, especially materials that are created only in digital formats, for current and future generations. ■

RELEVANT LINKS

NDIIPP
www.digitalpreservation.gov/

DuraCloud Project
www.digitalpreservation.gov/partners/duracloud/duracloud.html
duraspace.org/duracloud.php

DuraSpace
duraspace.org

OLE Project Publishes Reference Model for Next Generation Library System

The Open Library Environment (OLE) Project was initiated "to design a next-generation library system that breaks away from print-based workflows, reflects the changing nature of library materials and new approaches to scholarly work, integrates well with other enterprise systems and can be easily modified to suit the needs of different institutions." With funding support from The Andrew W. Mellon Foundation, the year-long project involved individuals from over 300 different organizations, including over 200 libraries. A final draft report is now available for community feedback.

The OLE Framework was defined to have: flexibility, community ownership, service orientation, enterprise-level integration, efficiency, and sustainability. In addition to replacing an existing ILS, OLE is intended to support expanded capabilities and support several existing open source front-end projects.

The bulk of the report is the detailed OLE Reference Model, an abstract representation of the OLE framework. "It describes the high-level functional components that will form OLE,... shows examples of third-party components that OLE will interoperate with,... includes the entities that have so far been identified as belonging in the OLE [resources, collections, persons, organizations, and services],...and illustrates the software that will manage and connect OLE components."

With the planning phase of the project complete, the next step is to identify a group of build partners to provide investment funds and to develop the OLE. The total partnership cost of the OLE Project over two years is projected to be $5.2 million. The intent is for project partners to contribute half of the OLE partnership costs and seek the other half from The Andrew W. Mellon Foundation. The project planners have recommended becoming a project within the Kuali Foundation. The details of the governance of the project will be determined by the investing build partners. ■

RELEVANT LINKS

Final OLE Project Report
oleproject.org/final-ole-project-report/

New Initiative: Vocabulary Mapping Framework

Work is under way to create an extensive and authoritative mapping of vocabularies from major content metadata standards, creating a downloadable tool to support interoperability across communities. The work is an expansion of the existing RDA/ONIX Framework into a comprehensive vocabulary of resource relators and categories, which will be a superset of those used in major standards from the publisher/producer, education and bibliographic/heritage communities. The resulting tool will be known as the Vocabulary Mapping Framework (VMF).

The existing RDA/ONIX Framework (which currently supports categorization of resource content and carriers) will be extended to support: works, parties, relators between resources, and relators between parties and resources. Vocabularies expected to be analyzed for inclusion in the mapping are: the *CIDOC Conceptual Reference Model* (ISO 21127), *The Dublin Core Metadata Element Set* (ANSI/NISO Z39.95), the *Digital Data Exchange*, the *Digital Object Identifier System* (ISO/DIS 26324), IFLA's *Functional Requirements for Bibliographic Records, MARC 21, Learning Object Metadata* (ANSI/IEEE 1484.12), the ONIX family from EDItEUR, and *Resource Description and Access* (RDA). ISO TC46/SC9 identifiers (e.g., ISBN, etc) are also among those standards which may be reviewed to support formal concept analysis, and some may be included in the Framework in future.

The results of the VMF project will be formally presented at an event at the British Library on the morning of November 9, 2009, and made available on the web. The project, which is largely financed by a grant from the UK Joint Information Systems Committee (JISC), is being carried out by Godfrey Rust and Steffen Lindek of Rightscom and Gordon Dunsire, Depute Director of the Centre for Digital Library Research at Strathclyde University in Glasgow, Scotland, with input from other domain experts. A virtual Advisory Group drawn from interested parties is being convened. The International DOI Foundation will provide the web hosting facility as part of its commitment to promoting the wider use of interoperable metadata, and will use the mapping vocabulary wherever possible to support the association of metadata with DOI names. ■

RELEVANT LINKS

VMF Project
www.jisc.ac.uk/whatwedo/projects/vocab-framework.aspx

SS [STATE OF THE STANDARDS]

In Development or Revision

Listed below are the NISO Working Groups that are currently developing new or revised standards, recommended practices, or reports. Refer to the NISO website (www.niso.org/workrooms/) and *Newsline* (www.niso.org/publications/newsline/) for updates on the Working Group activities.

WORKING GROUP	STATUS
Cost of Resource Exchange (CORE) Co-chairs: Ed Riding, Ted Koppel	**Z39.95-200x, Cost of Resource Exchange (CORE) Protocol** Draft Standard for Trial Use (DSFTU) through March 31. 2010
DAISY/NISO Standard Advisory Committee Chair: George Kerscher	**Z39.86, Specifications for the Digital Talking Book** Standard revision in development.
Institutional Identifiers (I²) Co-chairs: Tina Feick, Grace Agnew	Standard in development.
Knowledge Base And Related Tools (KBART) *Joint project with UKSG* Co-chairs: Peter McCracken, Sarah Pearson, Charlie Rapple	Recommended Practice in development.
ONIX-PL (Publication Licenses) *Joint project with EDItEUR* Chair: Alicia Wise	**ONIX-PL**, v1.0 issued by EDItEUR (November 2008 – available at www.editeur.org/21/ONIX-PL/). **OPLE (ONIX-PL Editor)**, v1.0 available for installation. Pursuing educational activities to promote adoption.
Physical Delivery of Library Materials	Working group being formed.
Single Sign-on (SSO) Authentication Co-chairs: Harry Kaplanian, TBD	Recommended Practice in development.
Standardized Markup for Journal Articles	Working group being formed.

Five-Year Review

The following published and approved NISO standards will be undergoing a five-year review in 2009, in accordance with Periodic Maintenance procedures. Any users of these standards are encouraged to comment on them at: www.niso.org/contact/. More information on the managing Topic Committees can be found at www.niso.org/topics/.

DESIGNATION	TITLE
ANSI/NISO Z39.18-2005	**Scientific and Technical Reports – Preparation, Presentation, and Preservation** Managing Topic Committee: Content & Collection Management
ANSI/NISO Z39.19-2005	**Guidelines for the Construction, Format, and Management of Monolingual Controlled Vocabularies** Managing Topic Committee: Content & Collection Management
ANSI/NISO Z39.29-2005	**Bibliographic References** Managing Topic Committee: Content & Collection Management
ANSI/NISO Z39.84-2005	**Syntax for the Digital Object Identifier** Managing Topic Committee: Content & Collection Management
ANSI/NISO Z39.88-2004	**The OpenURL Framework for Context-Sensitive Services** Managing Topic Committee: Discovery to Delivery

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