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Standards Column — Moving to Collections of Items

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The first applications of new information technology are often repurposing of old models, usually to do things faster or in more productive ways. It isn't until much later in the technology adoption cycle that entirely new methods of interaction or innovative new uses are discovered. This has been particularly true in the publication and information distribution communities.

The first application of digital distribution had been — and still remains for many publishers — the distribution of well-composed and formatted PDF files, which are facsimiles of the print version of a book or journal. Some of these PDFs might be interactive with live links to references or other content, but these PDF-based publications are still firmly rooted in the print model. Similarly, HTML pages are also often facsimiles of print, albeit with potentially more robust interactivity and display options. However, the traditional model of print is still visibly present.

On the Friday of **ALA's Midwinter Conference, RMG Consultants, Inc.** broached this topic at their **Twentieth Annual Presidents' Seminar**, "The View from the Top." **Jane Burke**, Vice President of **Serials Solutions**, made the point that publishers, librarians, and systems suppliers need to cease thinking of their collection as containing X thousand journals or books, and instead should shift their thinking of their collections in terms of having X million items or X million sub-items — that is, the articles, chapters, and other pieces of content that make up the larger package forms. The implications for systems and services in an environment made up of re-usable *items* are significant. Doing so will, of course, be a difficult transition because our community is tied in so many ways to the traditional structure of book and journal publication. However, new models and user behaviors are straining our systems and our cultural mindsets, and by moving to the item model we may begin to better prepare ourselves for future transitions needed to accommodate these new models.

Consider, for example, the International Standard Book Number (ISBN). The current text of the ISO standard for ISBN reads:

"Different product forms (e.g., hard-cover, paperback, Braille, audio-book, video, online electronic publication) shall be assigned separate ISBNs. Each different format of an electronic publication (e.g., ".lit," ".pdf," ".html," ".pdb") that is published and made separately available shall be given a separate ISBN."

The standard also specifies that each segment of content (such as a chapter, if sold separately) should receive a new ISBN. Since there may be multiple formats of many chapters, we very quickly get into a problem where a single book could have dozens or potentially

hundreds of ISBN numbers referring to it or its parts. How to manage these related ISBNs and ensure the quality and consistency of all the relevant metadata over time and through a variety of interacting systems is mindboggling. Tying the different ISBNs together could prove difficult, especially when publishers reuse the same content to create new content forms, such as edited article collections in a separate monograph. It is also increasingly easy and more common for end users to create their own collections, which can then be printed-on-demand, and how those might fit in with related ISBNs becomes another scenario for consideration.

Another example of the difficulty we will have in moving to an "item" perspective occurs when we look at page numbering, particularly of journal articles. In a print product, page numbers are key to finding content in a product, especially where single issues may run into the hundreds of pages. In an online environment, where the end user is most likely looking at a single article in a disambiguated context or possibly by clicking through a table of contents, the page number isn't a critical component either for discovery or citation. In this context, what is more important for linking and citation is a persistent location identifier, such as PURLs, handles, or DOIs. Adding to the conundrum, many established publications are posting content online as soon as the article becomes available in the production process, which is usually in advance of the print product. Page numbers are either assigned in sequence as the articles are released online or after their release, when they are compiled into the print issue. In several newer online publications, such as *PLoS ONE*, published by the **Public Library of Science**, the question of page numbers is eschewed altogether; the publisher has created what in some respects is a repository of articles with none of the packaging legacy of volumes, issues, or page numbers.

The Digital Object Identifier (DOI) has become the persistent identifier of choice by many, with the identifier often incorporating an ISSN, ISBN, or other content identifier. The DOI syntax has already been standardized by **NISO** (ANSI/NISO Z39.84-2005, *Syntax for the Digital Object Identifier*). The entire DOI system is currently undergoing standardization within ISO (ISO/DIS 26324, *Information and documentation — Digital object identifier system*). One of the concerns about the standardization of DOI at the international level, most strenuously voiced by the International ISSN center and the French national standards

body AFNOR, is that the DOI could be used in place of the ISSN, with the fear that it may even make the ISSN obsolete in the future. This concern is exaggerated, in my opinion, because the ISSN addresses a very specific need of identifying the serial publication for sales and management, which provides firmly entrenched value to the community. However, a more subtle concern of those that manage the ISSN system could be about supporting a package structure that has a diminishing value in the marketplace. The prominence of the article "item" rather than the journal "collection" seems to be on the rise, especially among end users. This is especially true in interdisciplinary fields, or where a scholar is reaching to find connections between fields. In these cases, discovery is often focused on the items (i.e., articles or chapters) that draw the two areas together, rather than looking at the larger packages surrounding those items. There is also increasing attention being paid to sub-items — such as the charts and figures in an article — or even supplemental materials, such as test data and interactive visualizations, that were never available with a print journal.

This is not at all to suggest that packages such as journals are unimportant. The concept of a journal has a number of value-added services to the community and is unlikely to disappear in the foreseeable future. Having an article associated with a known journal title provides credibility — through the journal's peer-review process or editorial policies, for example. The journal also provides a cohesive scope, descriptive framework, and presentation for the items it contains. Journals as a package create a management structure for delivering content through the supply chain of distributors and libraries to the end users. Lastly, one should not discount the information discovery enabled by reading through a journal that would be unlikely in a search-only environment.

Our community has much to discuss and many challenges to solve as we move further into the item-based environment.

NISO, in partnership with the **Book Industry Study Group (BISG)**, will be hosting a free pre-meeting on this issue on the afternoon of Friday, June 25, 2010 prior to the **American Library Association** annual conference in Washington, DC. Now in its fourth year, the **NISO/BISG Changing Standards Landscape Forum** has proven a very informative and interesting program. More details on this year's program will be available later this spring. I look forward to seeing you in June as we tackle the issues for managing collections of items.